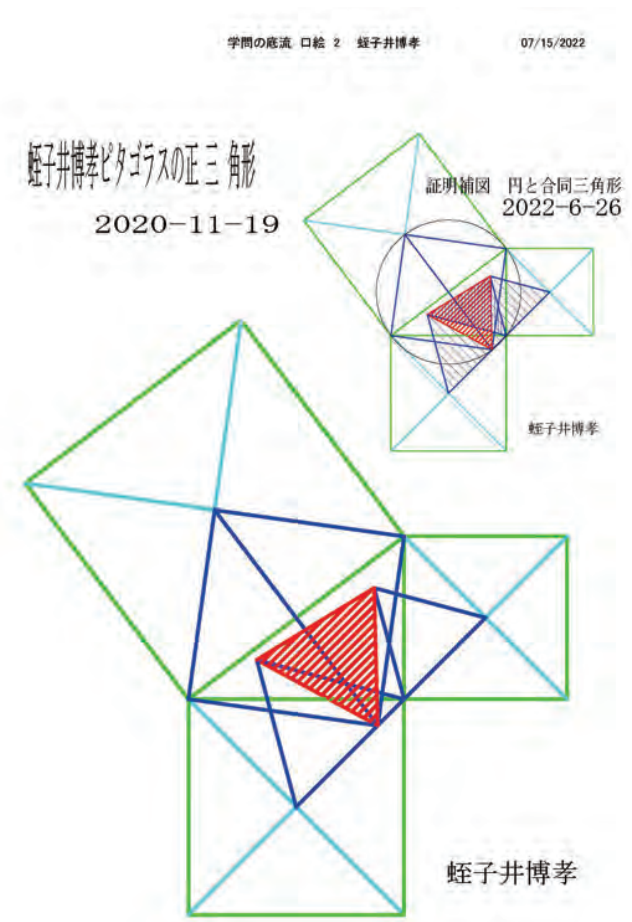
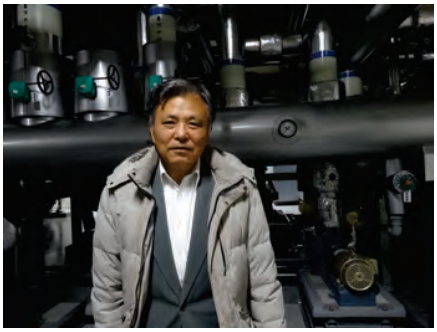
PC幾何学草書100

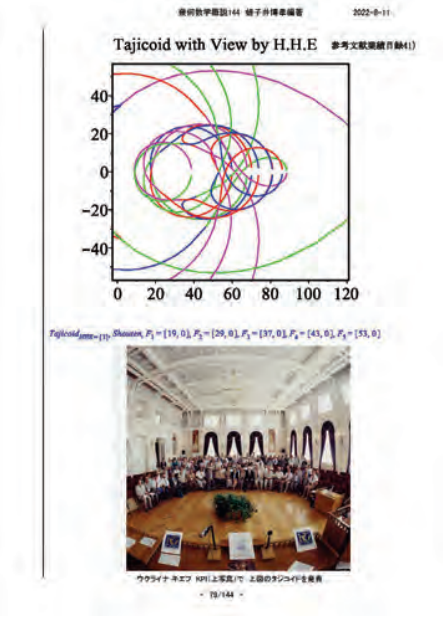
日本図学会名誉会員　蛭子井博孝編著

思考とは何かを問い続けて　思いは同じ人の幸せ





阪大サイバーメディアセンター階下冷却装置室にて



http://hirotaka-ebisui.com/

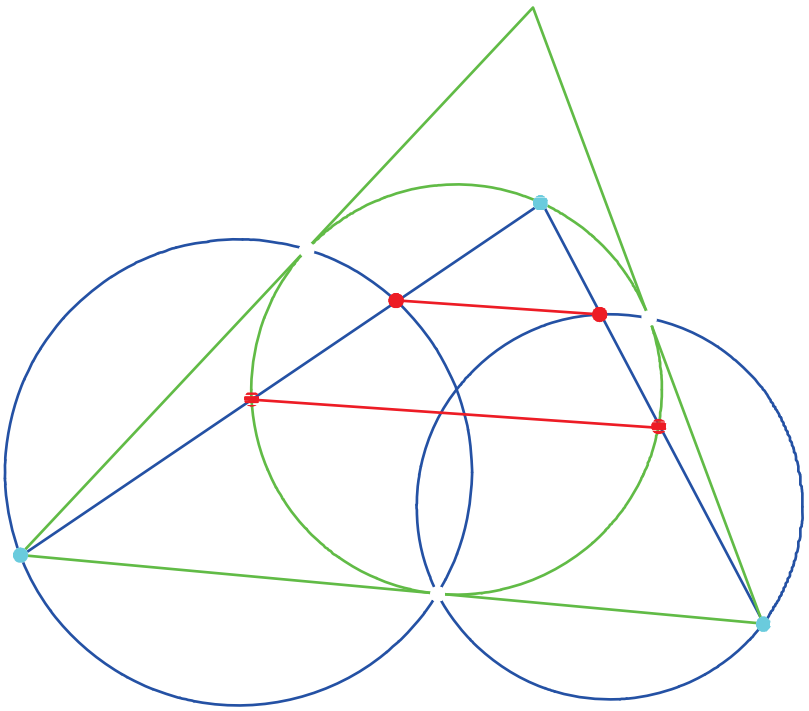
自由と情熱と安らぎ

序

数学を再考するには、何から始めれば、いいだろうか。　　私は、数学史を、よく知っているわけではない。幾何と数学の違いを考えることいや一体化すること。何はさておいても、ギリシャ、エジプト数学から始めねばならないがあまりにも、古く、そこまで、振り返るのは難しい。ユークリッド原論が、その当時の、後世への土産として、残されているのは、幸いである。これを隅から隅まで読むのは、立派な、幾何論理を、勉強することであろう。そして、アポロニウス、パップスの幾何学へと駆け上がること。やっと、幾何の応用が、見え始まる。そして、ヨーロッパの歴史の暗黒時代のは、イスラム、インド、中国に、その数学の営みの記録が、残っているのでは、なかろうか、とにかく、ガリレオ、ケプラーの時代に、天文学の芽が吹きで、ミケランジェロ等が、透視図という、射影空間幾何を紐解いている絵画が残っている.さらに、パスカル、デカルト、歴史は、多くの数学者の名前は、残していない。数学、幾何学の歴史の断片を、見ながら、オイラー、ニュートンの微積、ラグランジュ､この頃から、様々な人の業績を振り替えれる。その量は膨大で、何から何まで、見ることはできない。今日の、記憶技術は、それら、全体を手のひらにのせれるほどになっている。だからといって、一人のひとが、それらを全部、目を通すことはできない。存在の部分性という．全体の存在と、高々100年ぐらいの命である個人への具現化の部分性という学問の不確定性を避けて通れない。さて、現在フォンノイマンによる、２進数によるプログラムストアド形式のハード装置の開発による、PCと呼ばれる電子計算機の小型化が進み、内蔵ソフトの開発で、数式処理や、CAD作図、文書編集等が、DL商品の実行で、個人レベルで、気軽にできるようになった。
ここに、有限時間個人生命社会の世代を超えた歴史的業績の存在の具現化である再現と保存ができるようになったといえる。 そういう意味において、私の数学再考の記録も、社会の一助たり得ると確信する。日々、新しく、見つかる、幾何の定理、命題。それらが、生き物のように、見え隠れする本を著すことを、皆さんとともに味わいたい。
私のPC幾何数学者としての役割が、この短い序文で、理解してもらえたらありがたい。デカルトの卵形線をライフワークにして、さらにヘキサゴンという定理の発見を経て、非共点定理というべきか星々の構図の公律を三角形の重なりの中に見いだした。今は、平行線に公理の再考に興味を持ちながら、ヘキサゴンの定理など、自分の知的財産を育てることに興味を持っている。さて、楕円の一般化の研究はtajicoidという、無限次数につながる図系列の発見にたどり着き、終わりを告げようとしている。それらの研究は(Extended OHval）論として2重閉曲線4次曲線の中に、楕円宇宙論でなく、内宇宙(物理空間）中宇宙　外宇宙の3層構造空間論のアイデアが、含まれていることを言及しておきたい。重力波どころか、精神波(思考波）(生命波）が、存在しうる新思想が、芽生える可能性がありはしないだろうか。

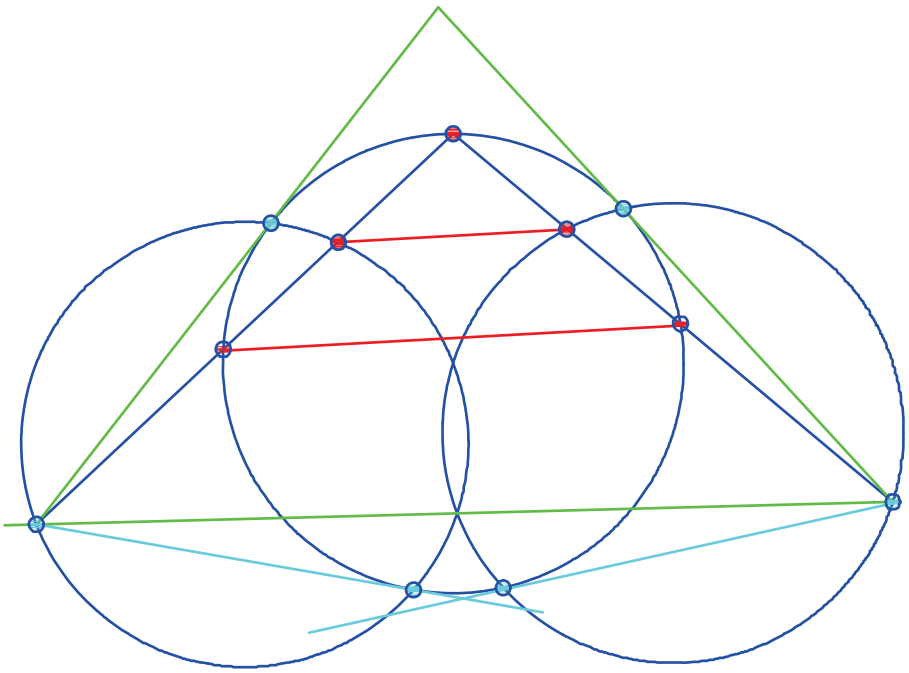
とにかく、世の中で何が大切か、空間か, 時間か, 内容か、動きか、人々か, 考える対象か、部分か、全体か、とにかく、物事は変わってゆく。しかし、時にとどまり､時に眠り、時に、新しい目覚めが待っている。憩い 考える時、PC幾何学の情熱と学問の情熱は安らぎに変わることに、言及したい。　蛭子井博孝　2024/04/08記　中段追加4-21改記

平行線ありき



蛭子井博孝　2020-9-25

三角形と接点円の平行線定理

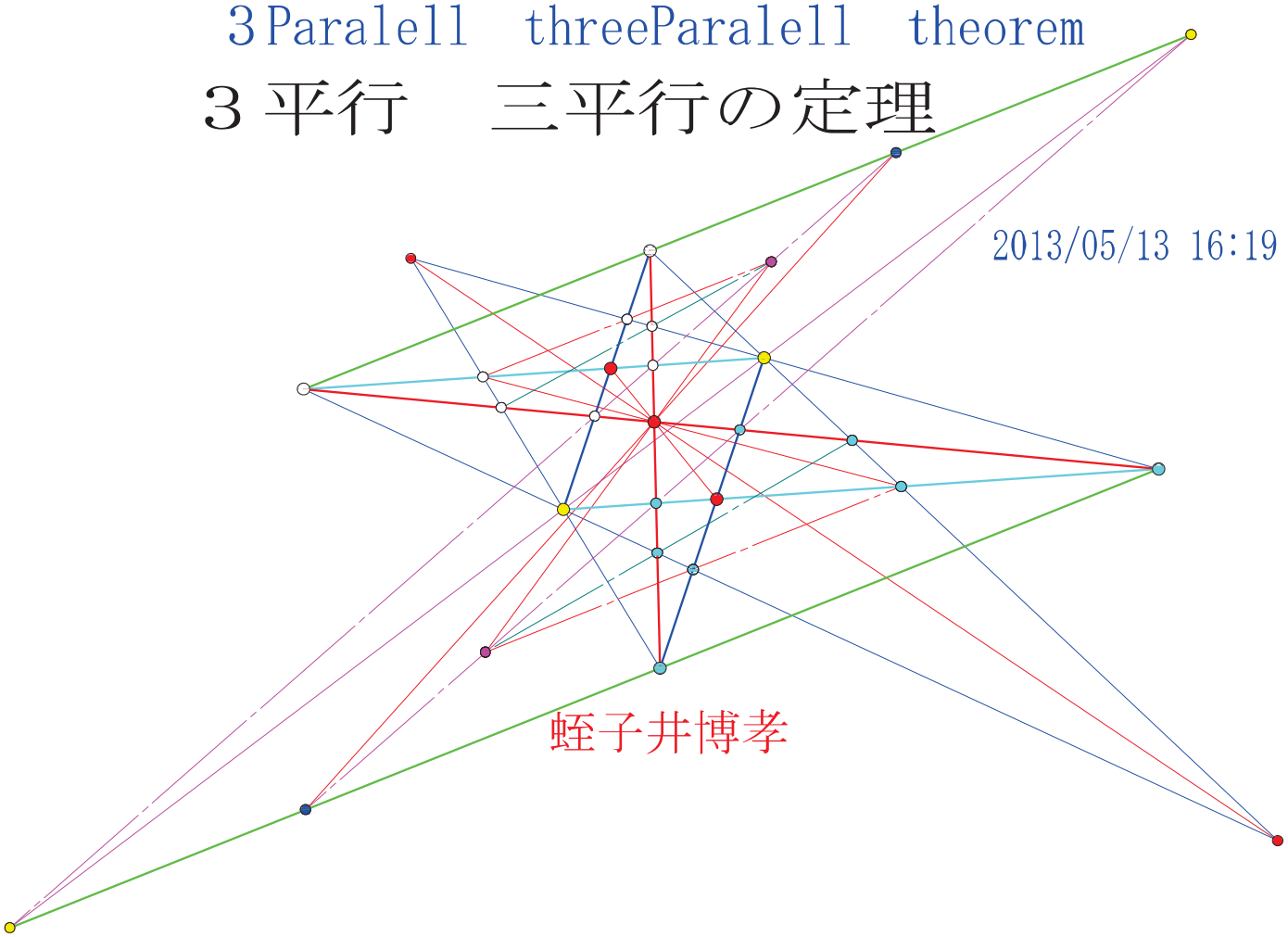


蛭子井博孝　2020-10-2

3Paralell threeParalell theorem

３平行　三平行の定理

2013/05/13 16:19



3Paralell threeParalell theorem

３平行　三平行の定理

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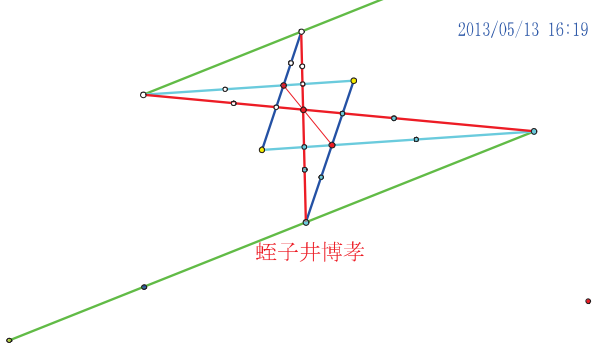
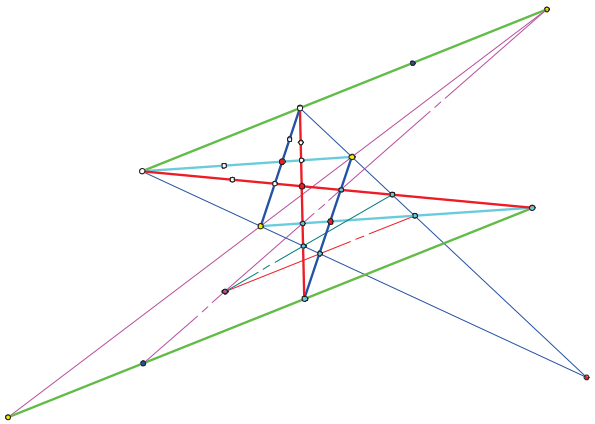
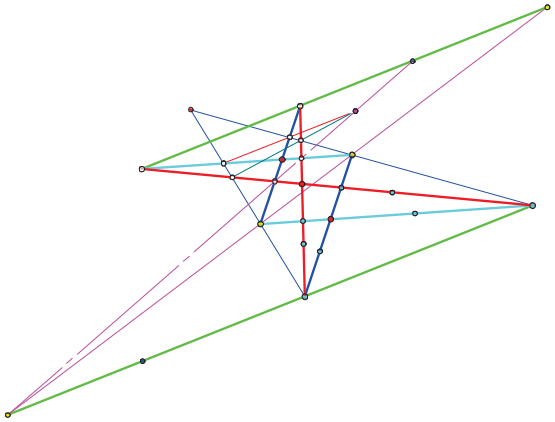
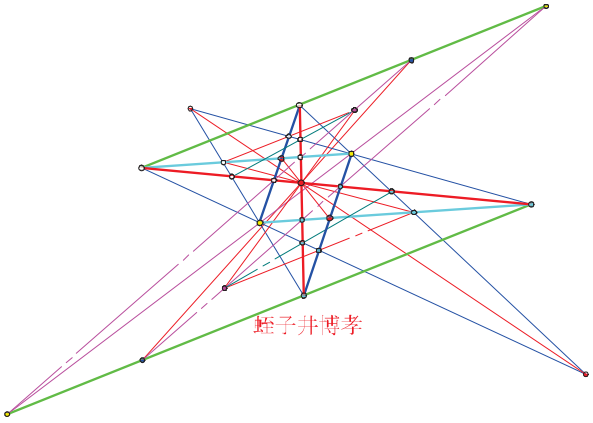




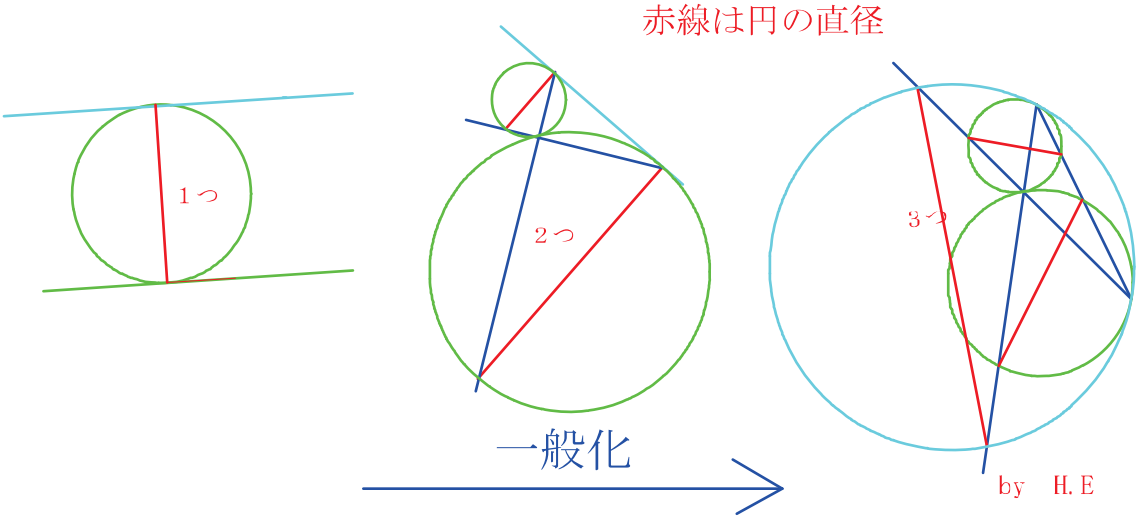




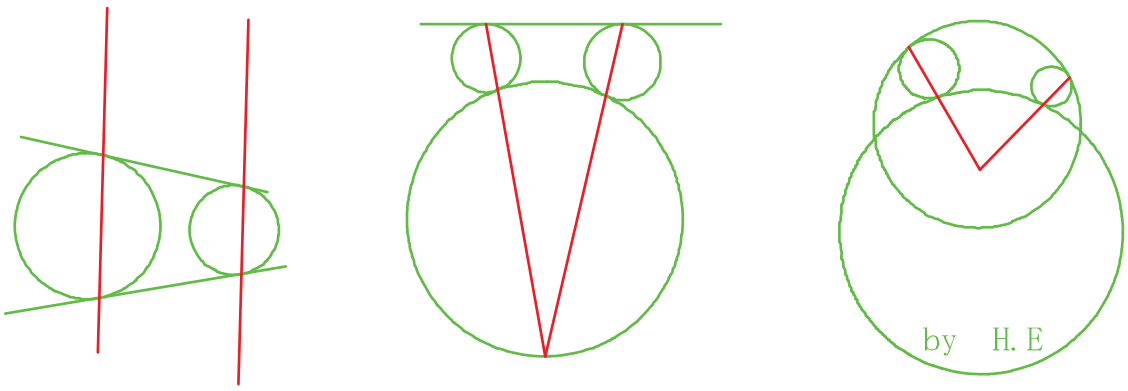
接点を結ぶと言うことにおいて

2つの緑の図形と、1つの水色の図形で、同じ構図はできるのか

赤線は円の直径



円と直線の違いは何か
三つの図の違いは何か



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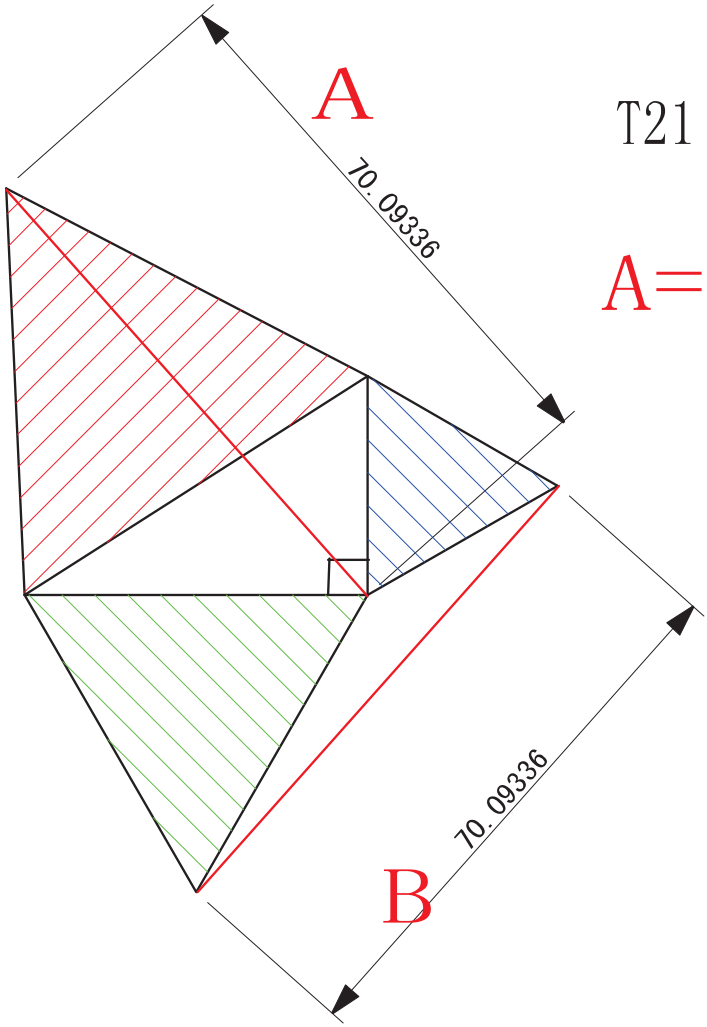

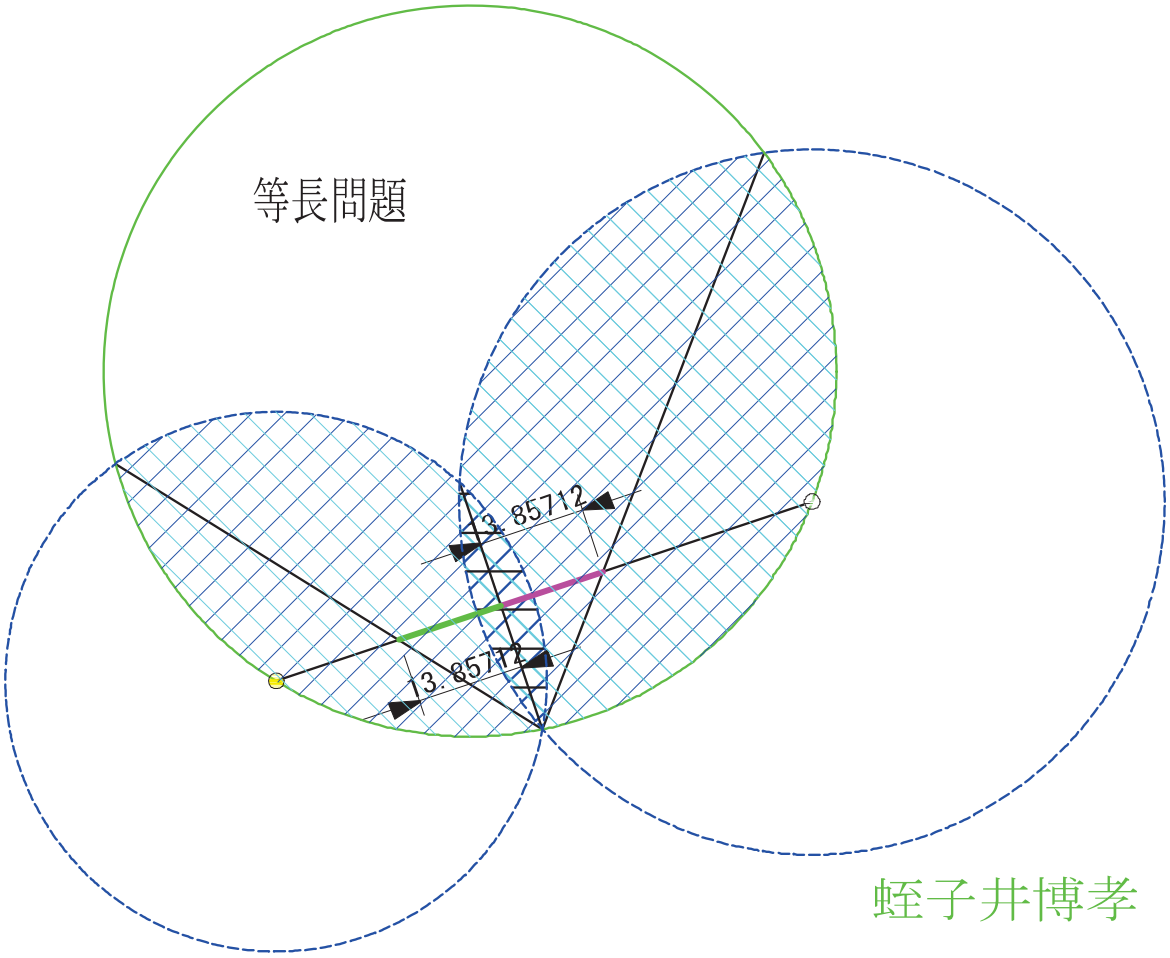

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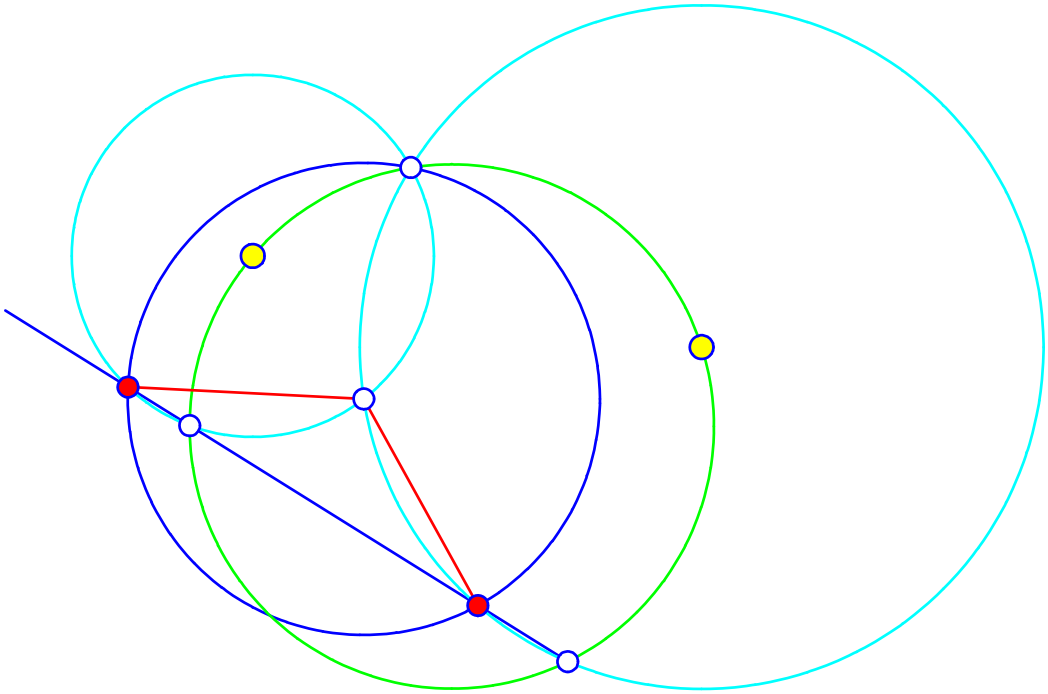
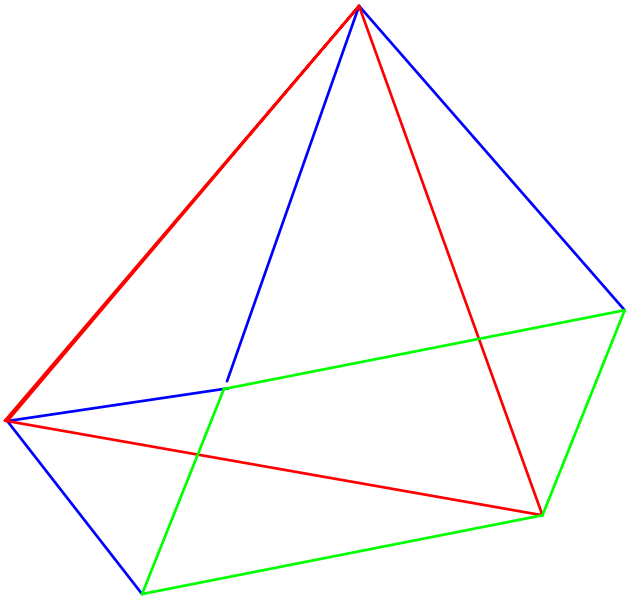
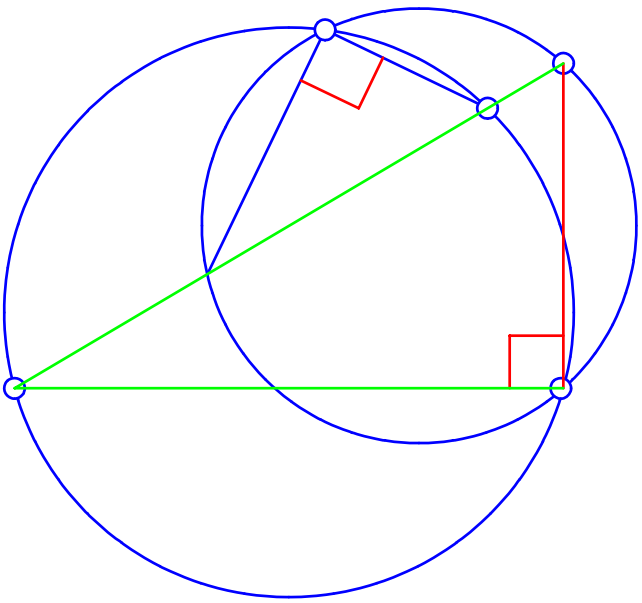


2024−4−16再清書

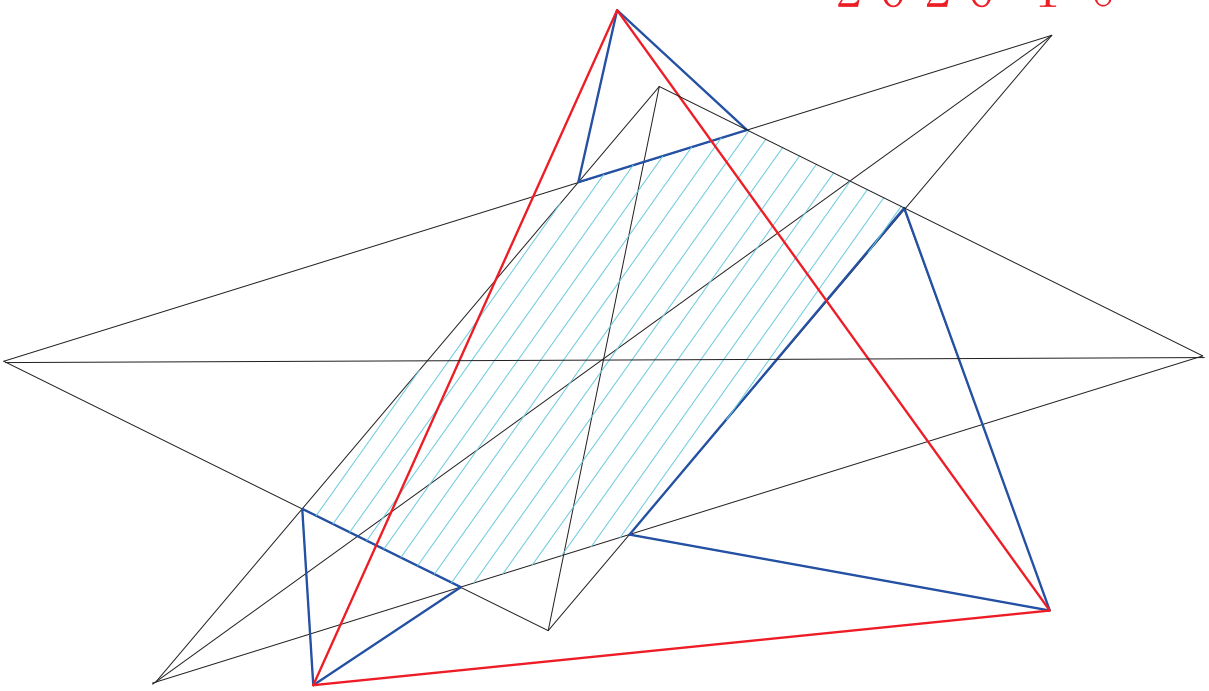




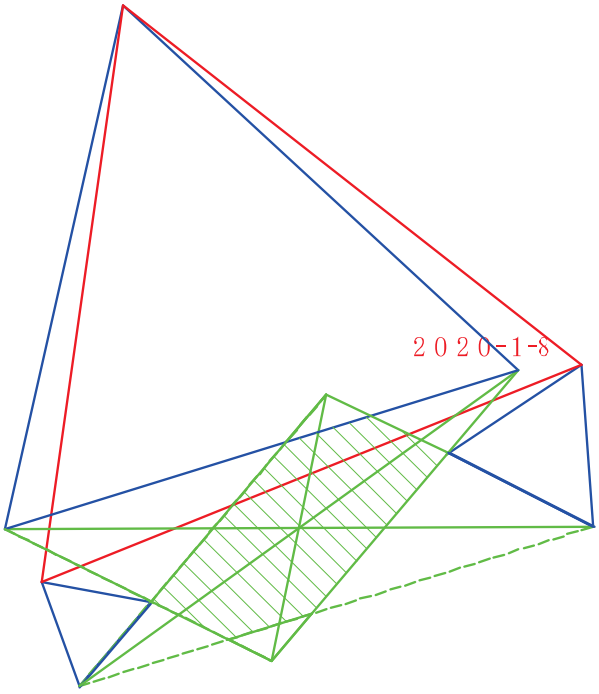
蛭子井博孝

三角形重なり辺の正三角形による正三角形の定理

２０２０-１-８



蛭子井博孝

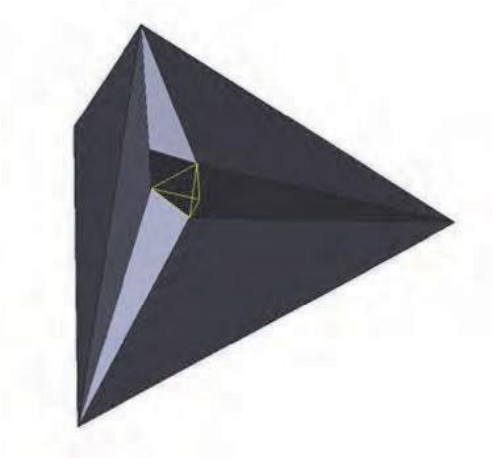


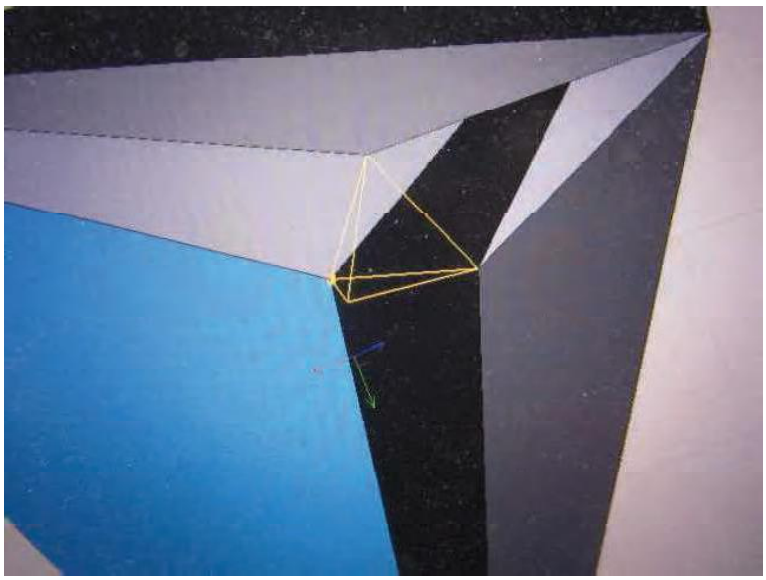
蛭子井博孝

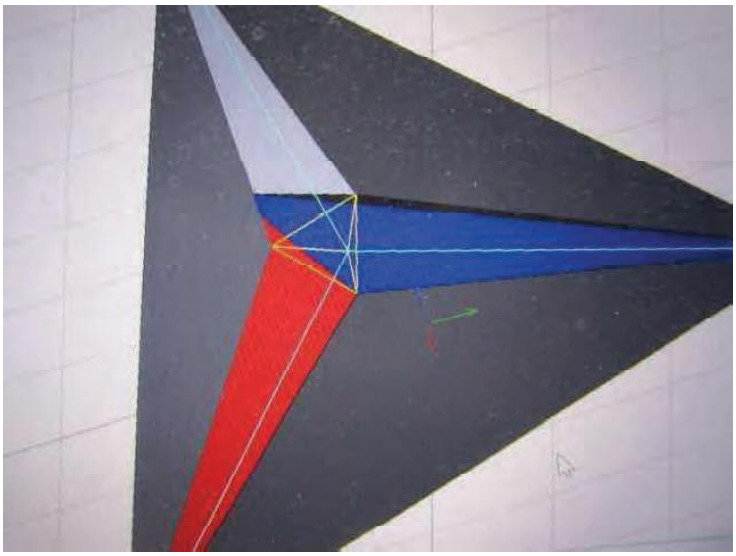
2重三角形の定理

モーレーの 3D 化正四面体定理

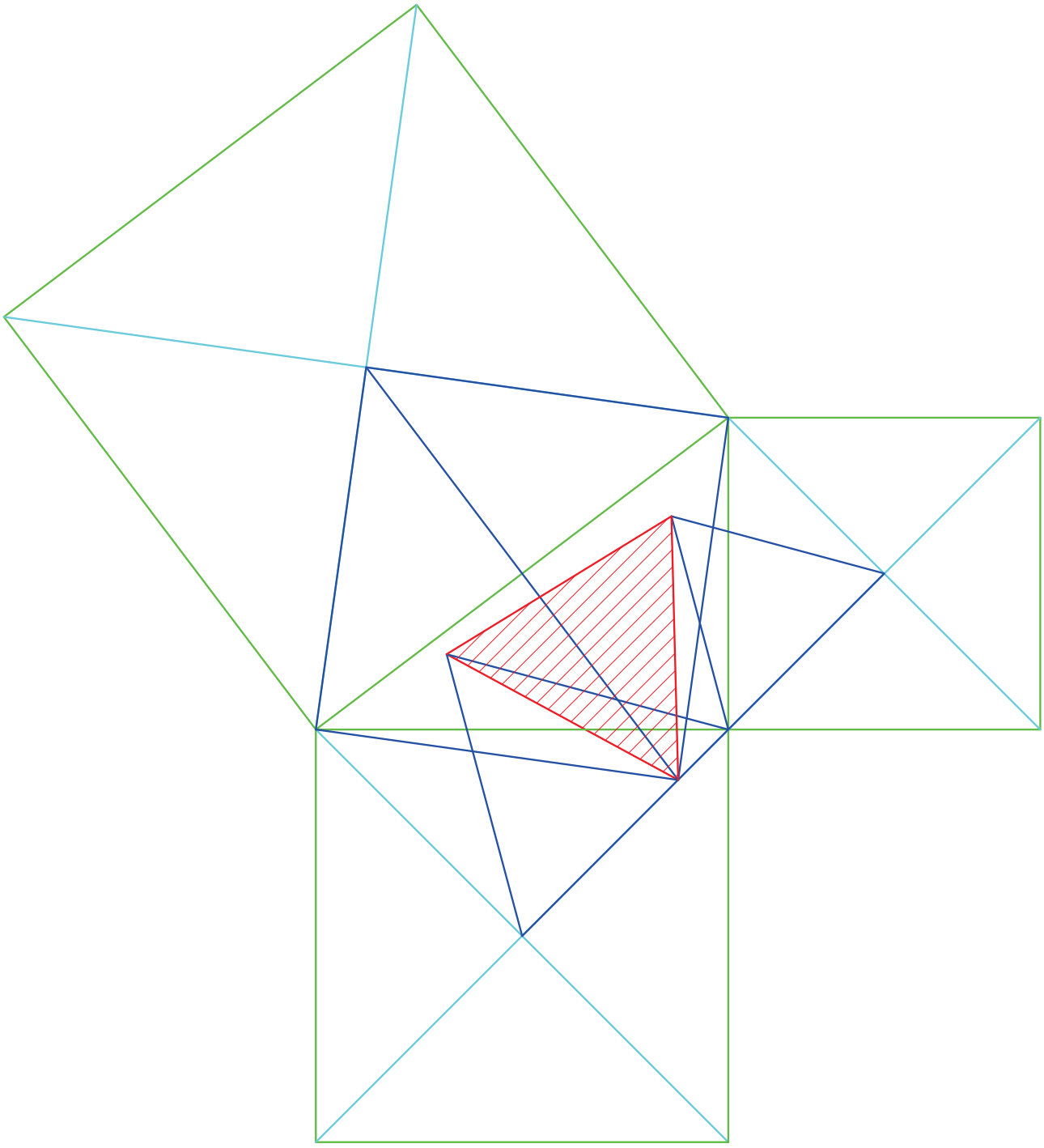
一般の四面体の 6 稜線の面角 3 等分面を作り、1 つの面に近い面の 3 辺を通る三等分面の交点ををそれぞれ、四面体の 4 面に作るとその 4 点は正四面体になる。







直角三角形と正方形の正三角形

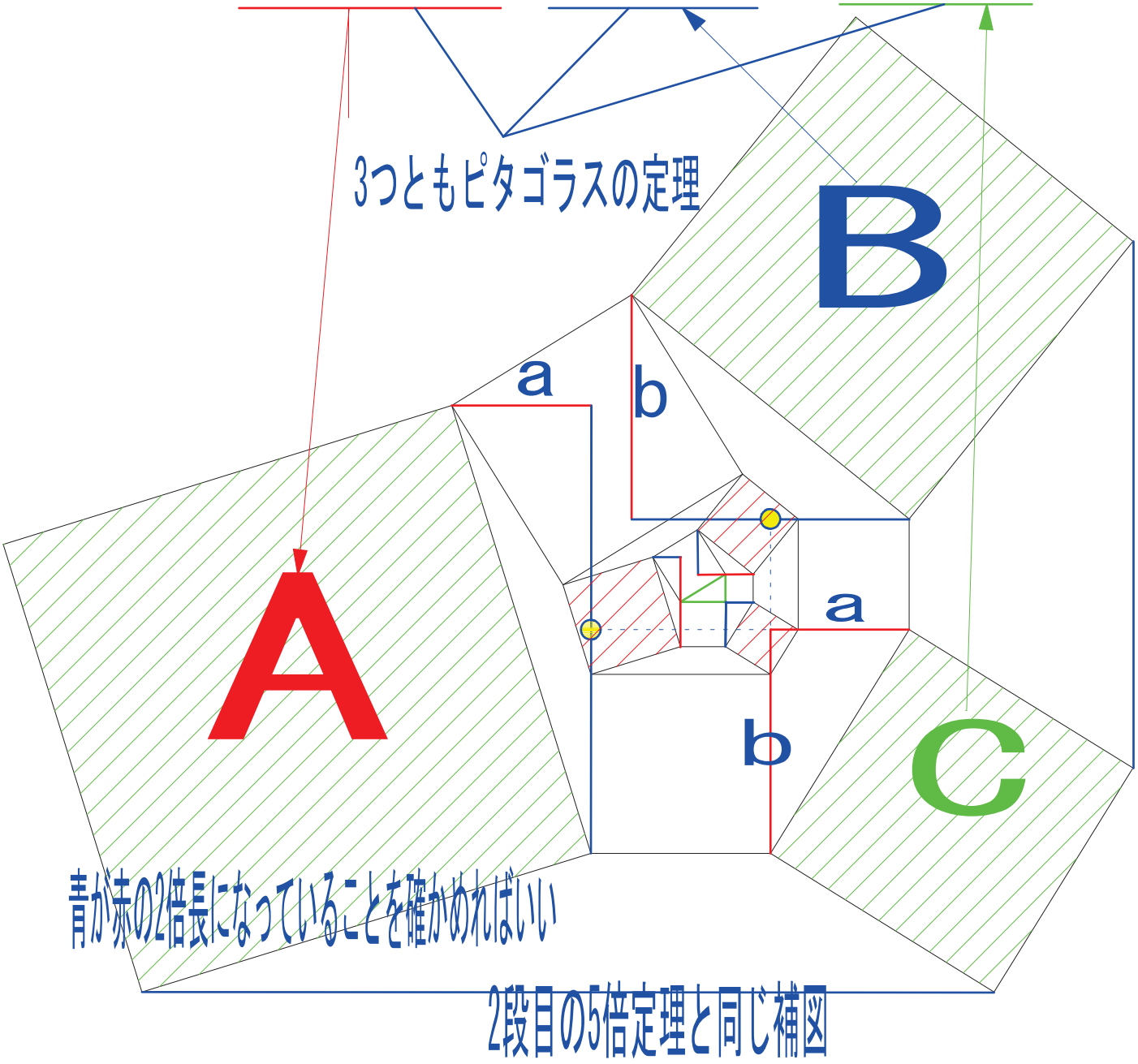


ピタゴラス無限拡張連鎖4段目の面積5倍の定理と証明

参照：E.マオール、伊理由美訳；”ピタゴラスの定理”、191p、岩波書店　2021−5−9

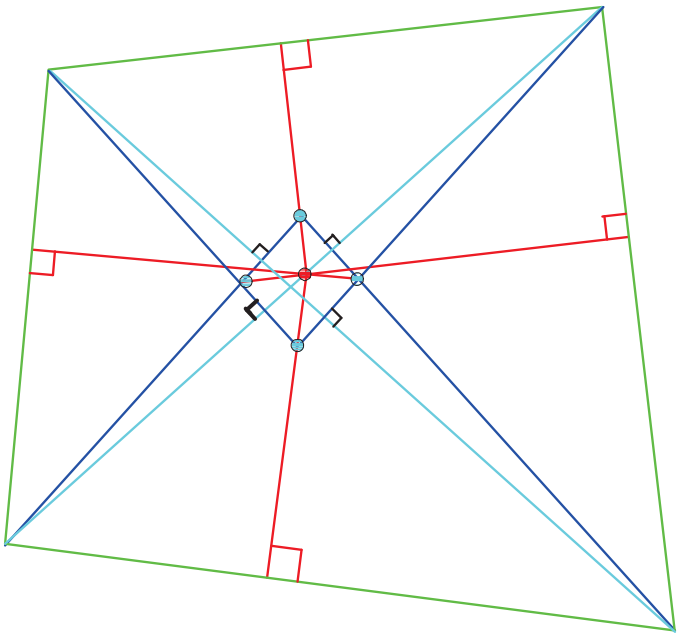
$$A + B = 5*C$$

$$a\hat{}2+(2b)\hat{}2+(2a)\hat{}2+b\hat{}2=5(a\hat{}2+b\hat{}2)$$



蛭子井博孝

四角形の垂心



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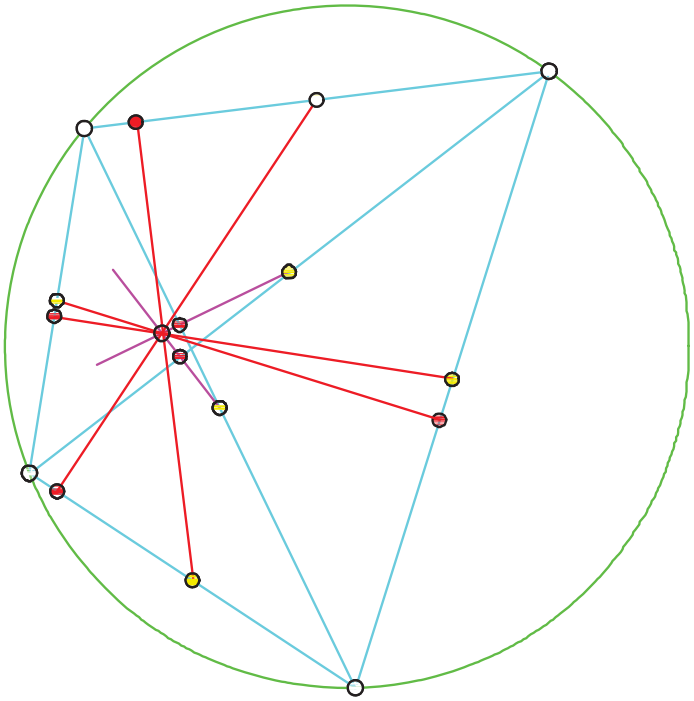
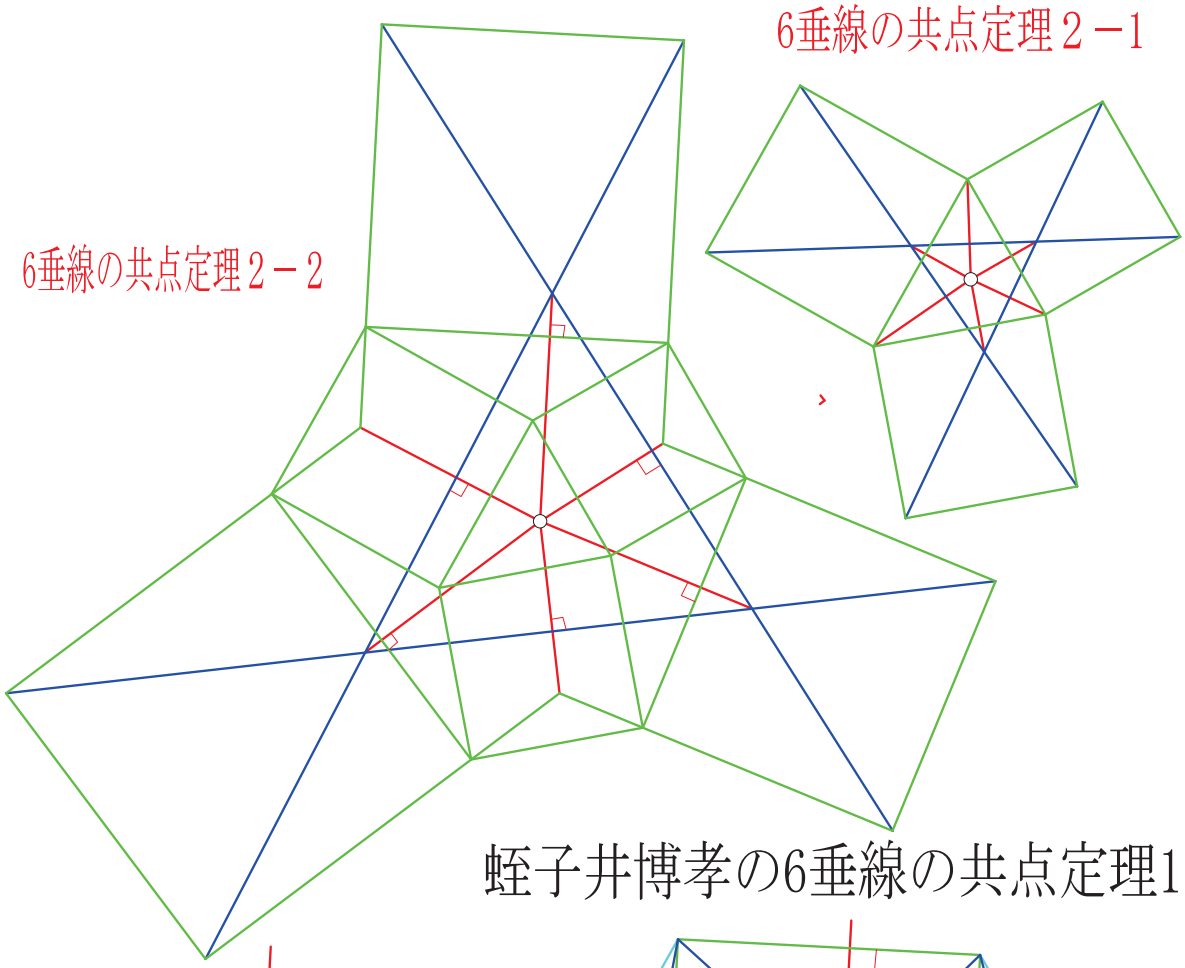
円内接四角形の垂心の定理：辺の中点より対辺に下した垂線は一点で交わる



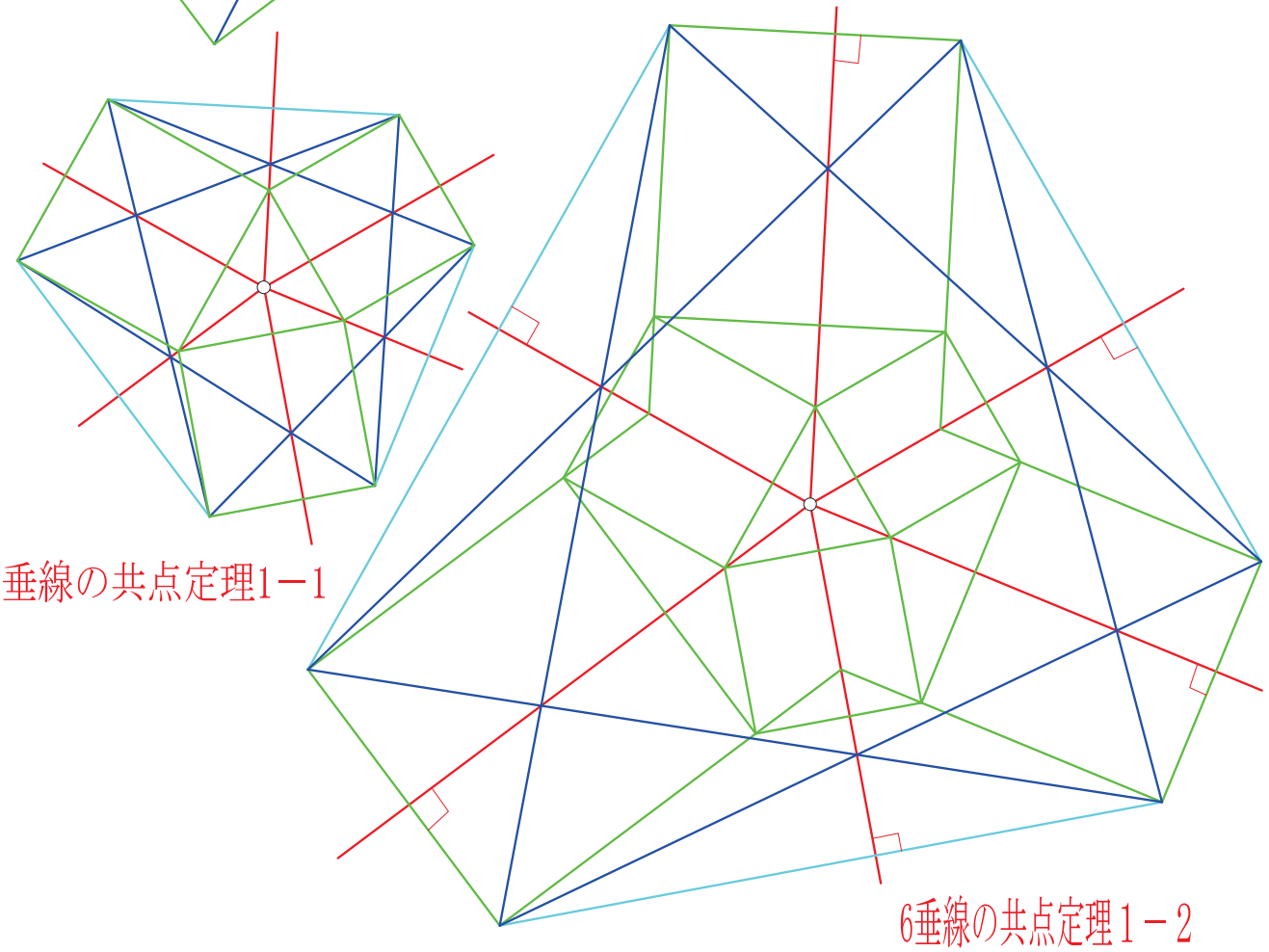
２０１５ー4-１４清書

6垂線の共点定理２－1

6垂線の共点定理２－２



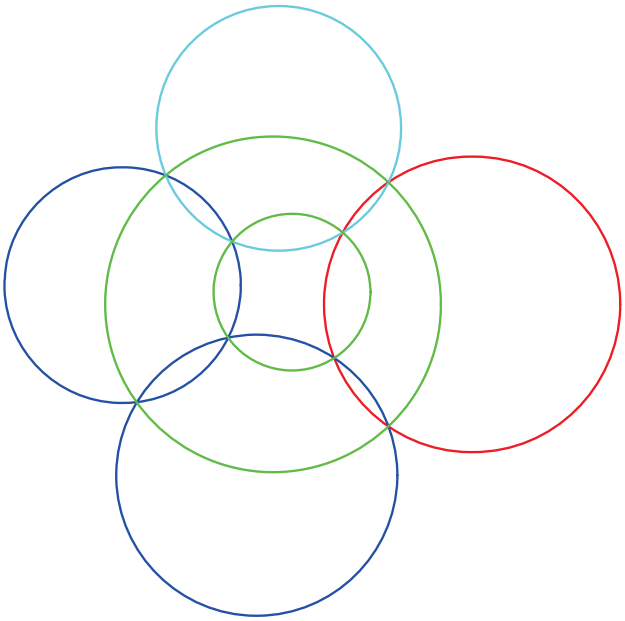
蛭子井博孝の6垂線の共点定理1、２



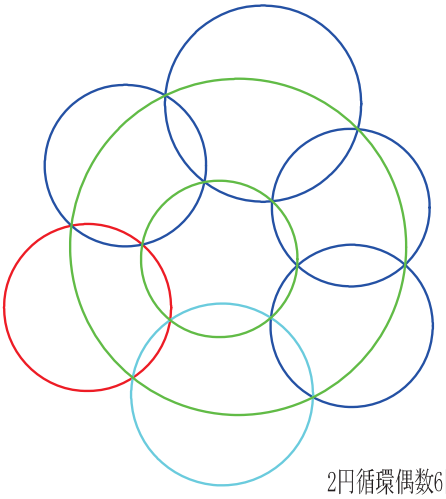
6垂線の共点定理1－1

6垂線の共点定理１－２

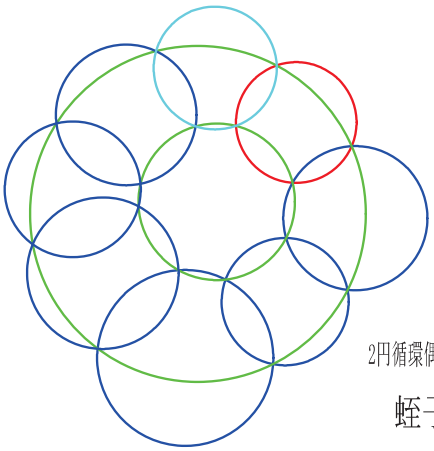
2円偶数の定理



2円循環偶数４円の定理



2円循環偶数6円の定理

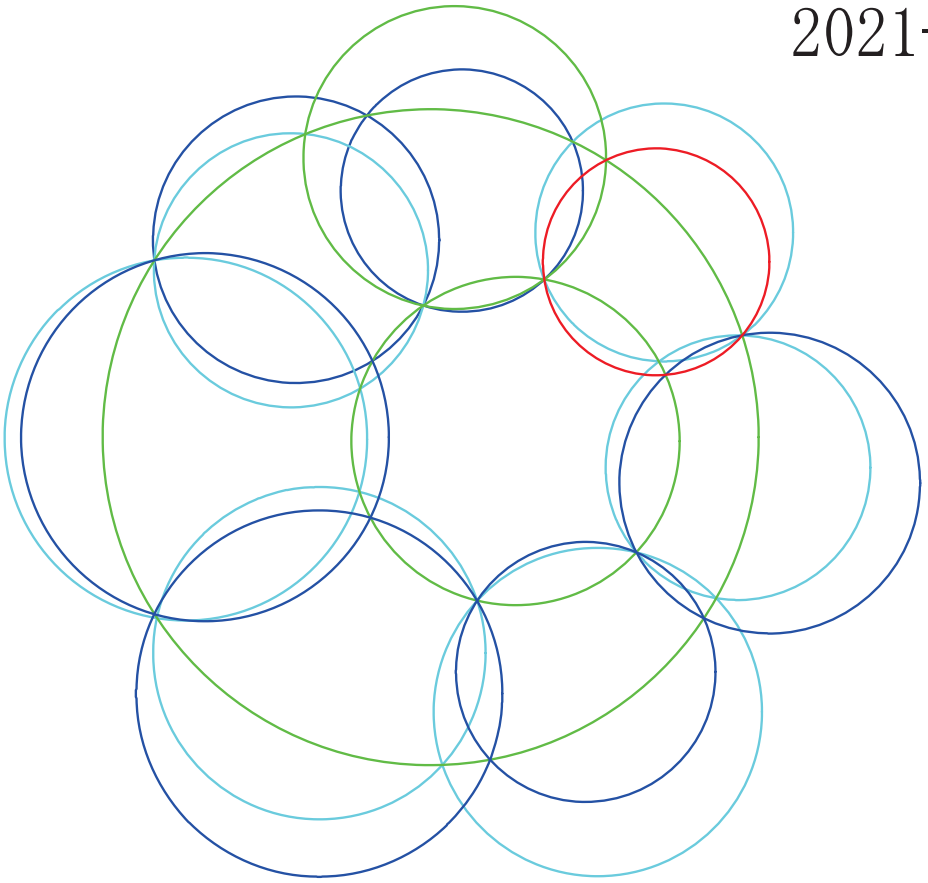


2円循環偶数8円の定理

蛭子井博孝

2円奇数円2循環定理

2021-6-11



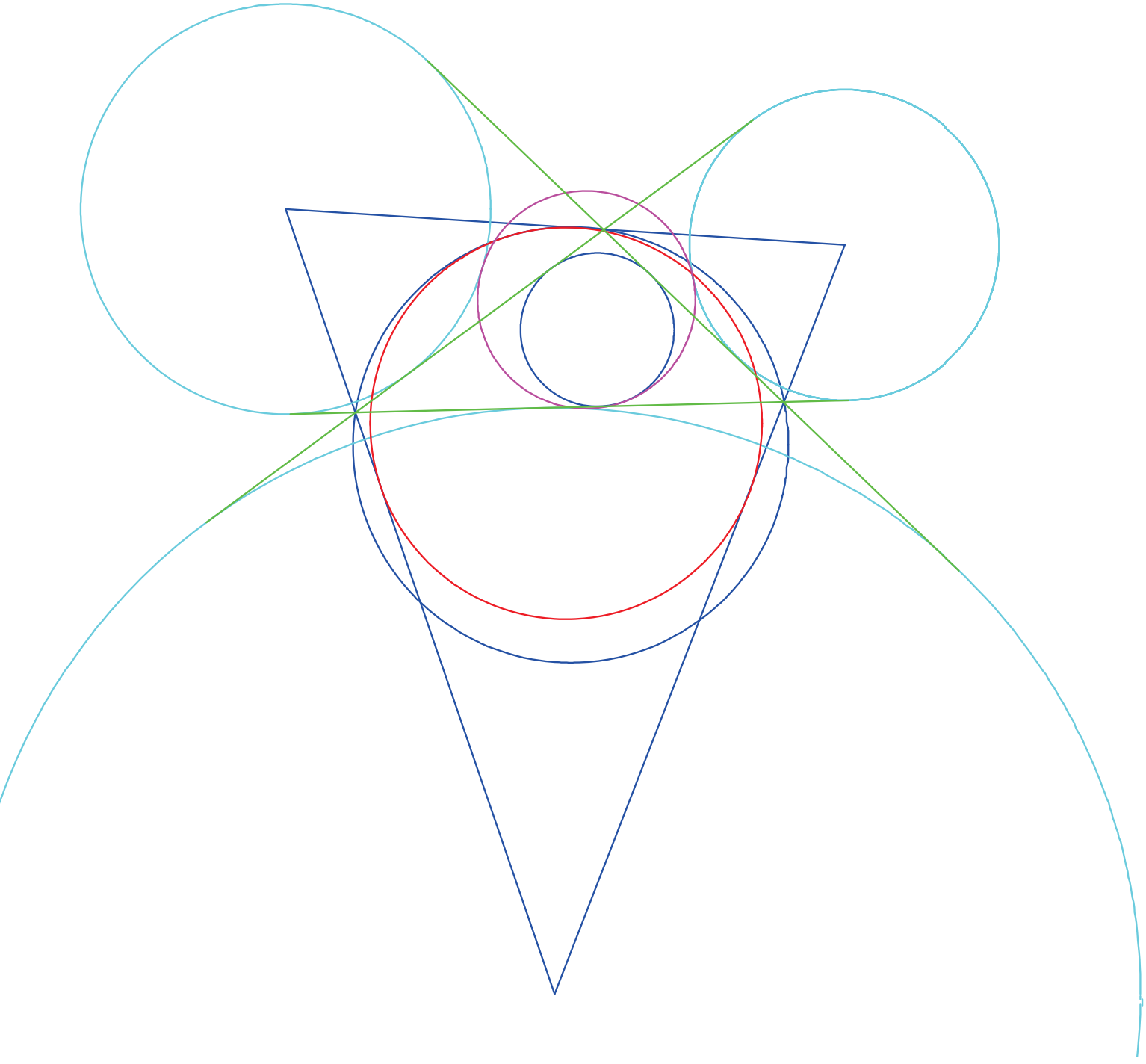
蛭子井博孝の傍接円の定理　2020-11-15

フォイエルバッハ円　内接円に外接する円

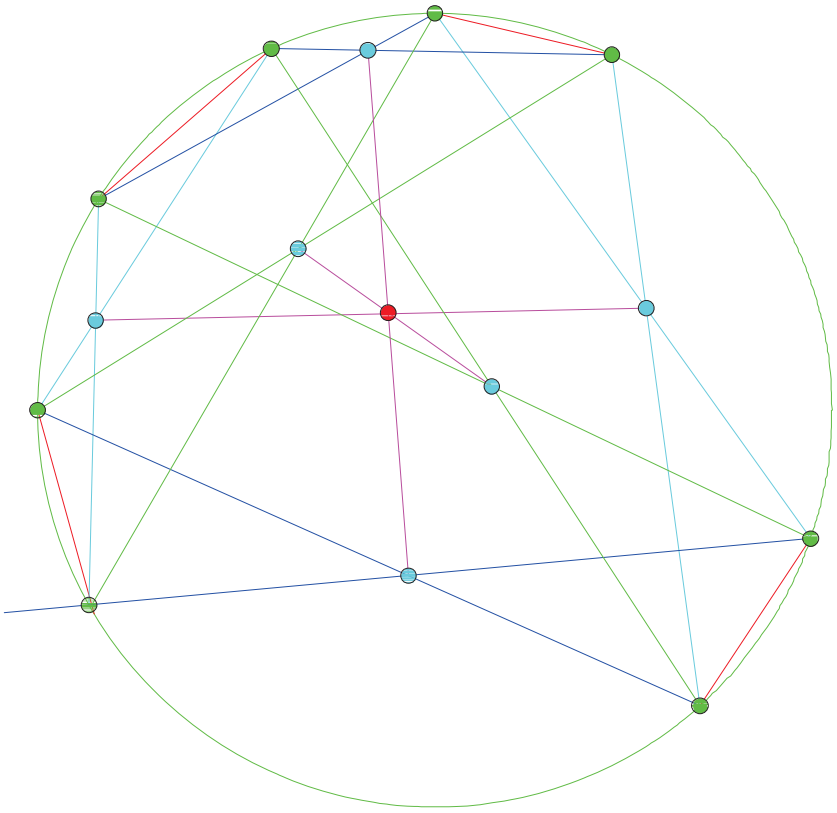
傍接円に内接し、内接円に外接する三角形の九点円

蛭子井博孝円　外接円に内接する円

傍接三角形に内接し，傍接三角形の9点円である外接円にも内接する円



5’　円8点　3線共点　定理(ABCDの定理)



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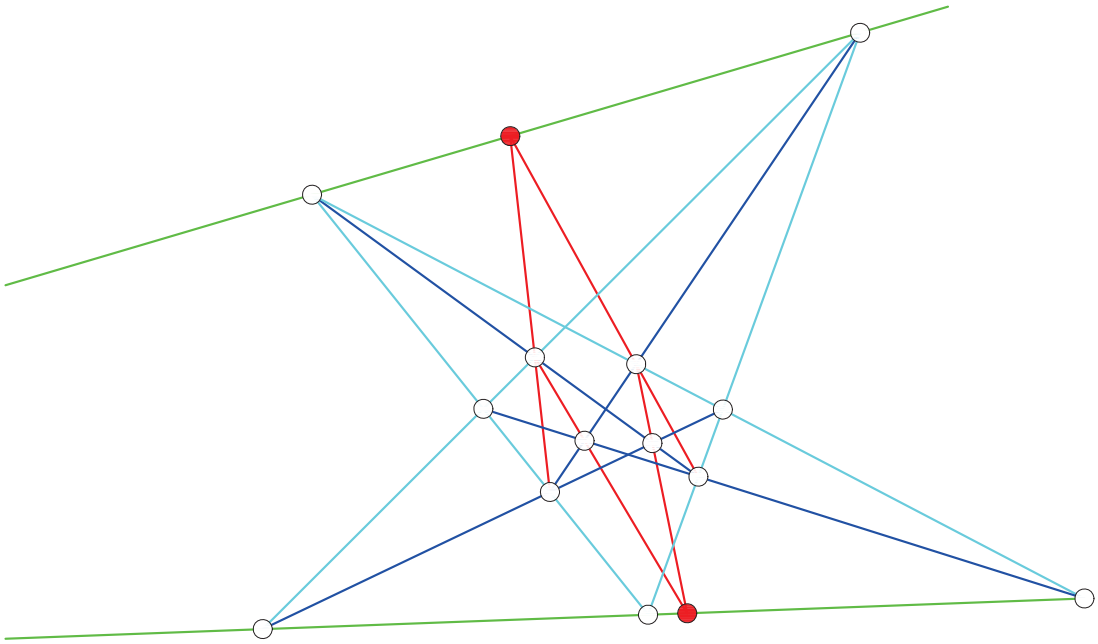
2直線上2点3点パップス濃縮定理



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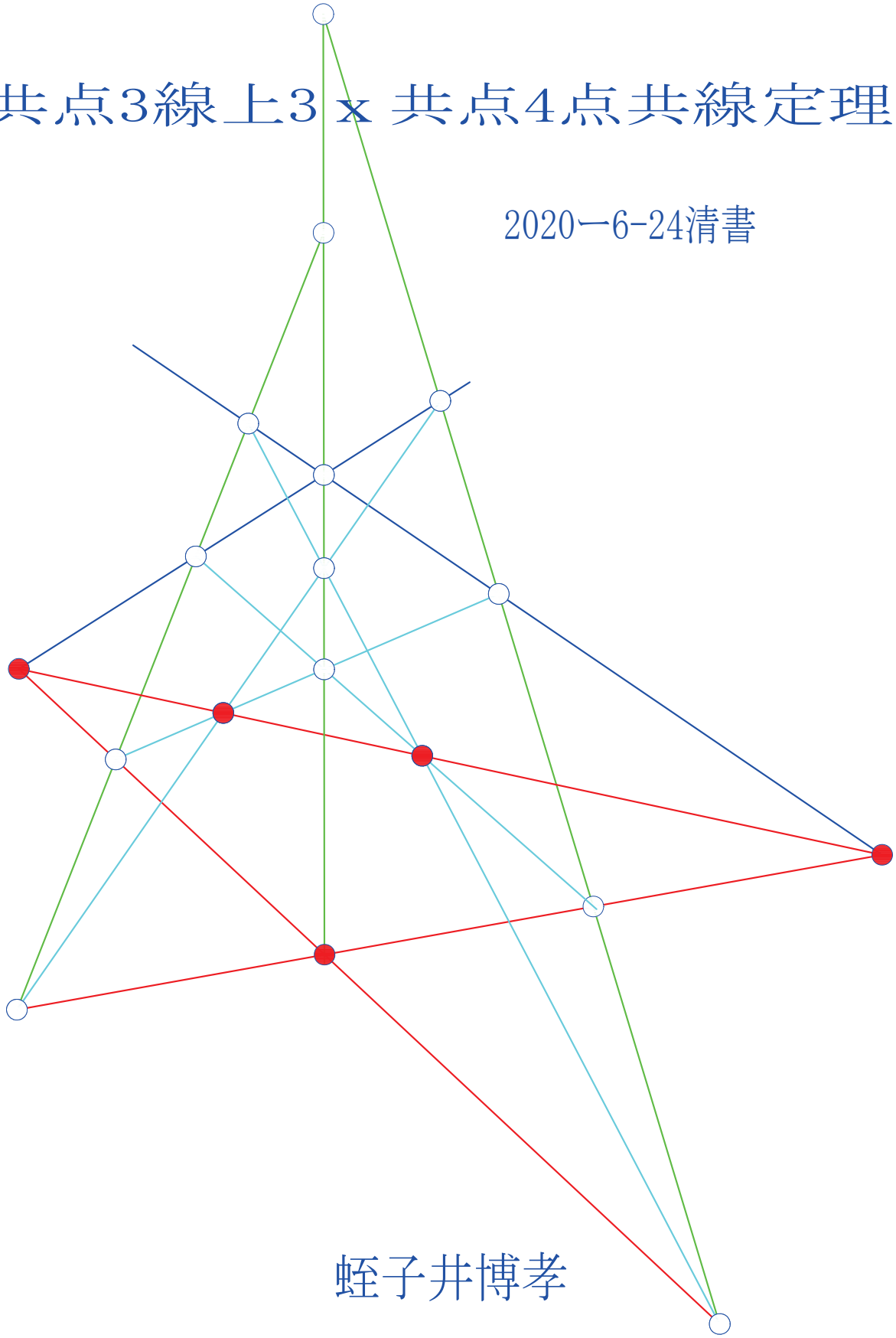
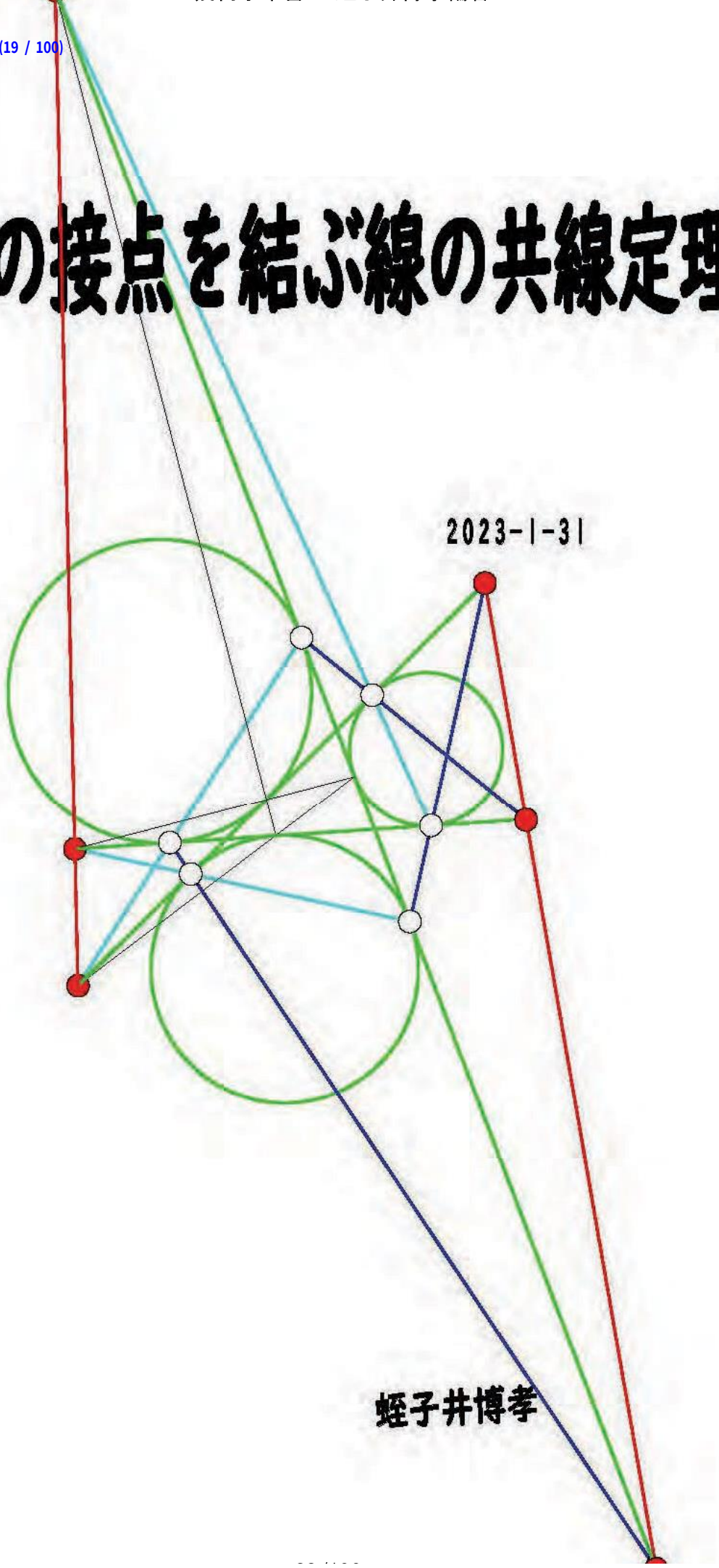
非共点3線上3ｘ共点4点共線定理

2020ー6-24清書



蛭子井博孝

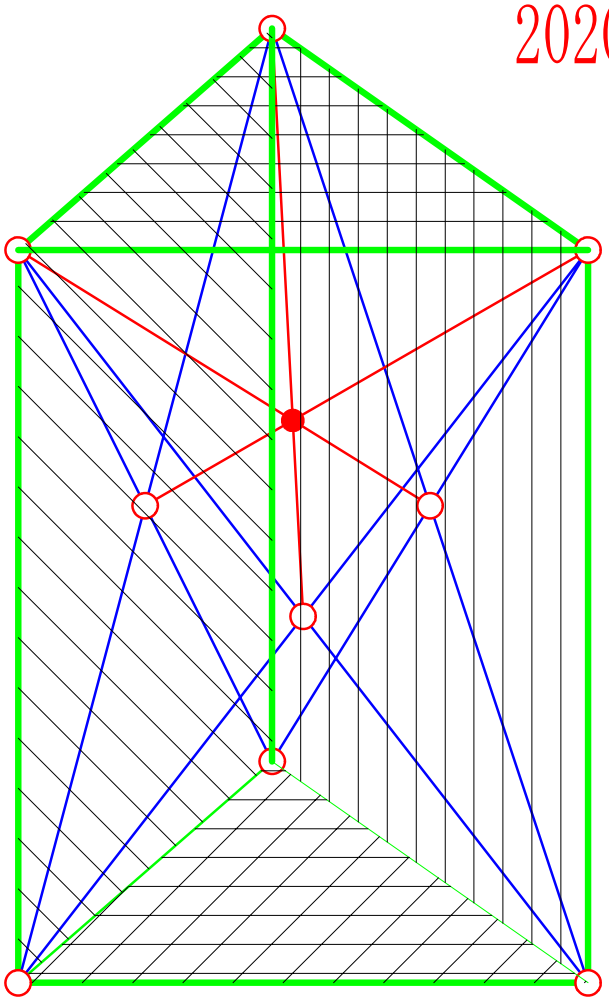
傍接円の接点を結ぶ線の共線定理



三角柱の定理

20244－4－12再清書

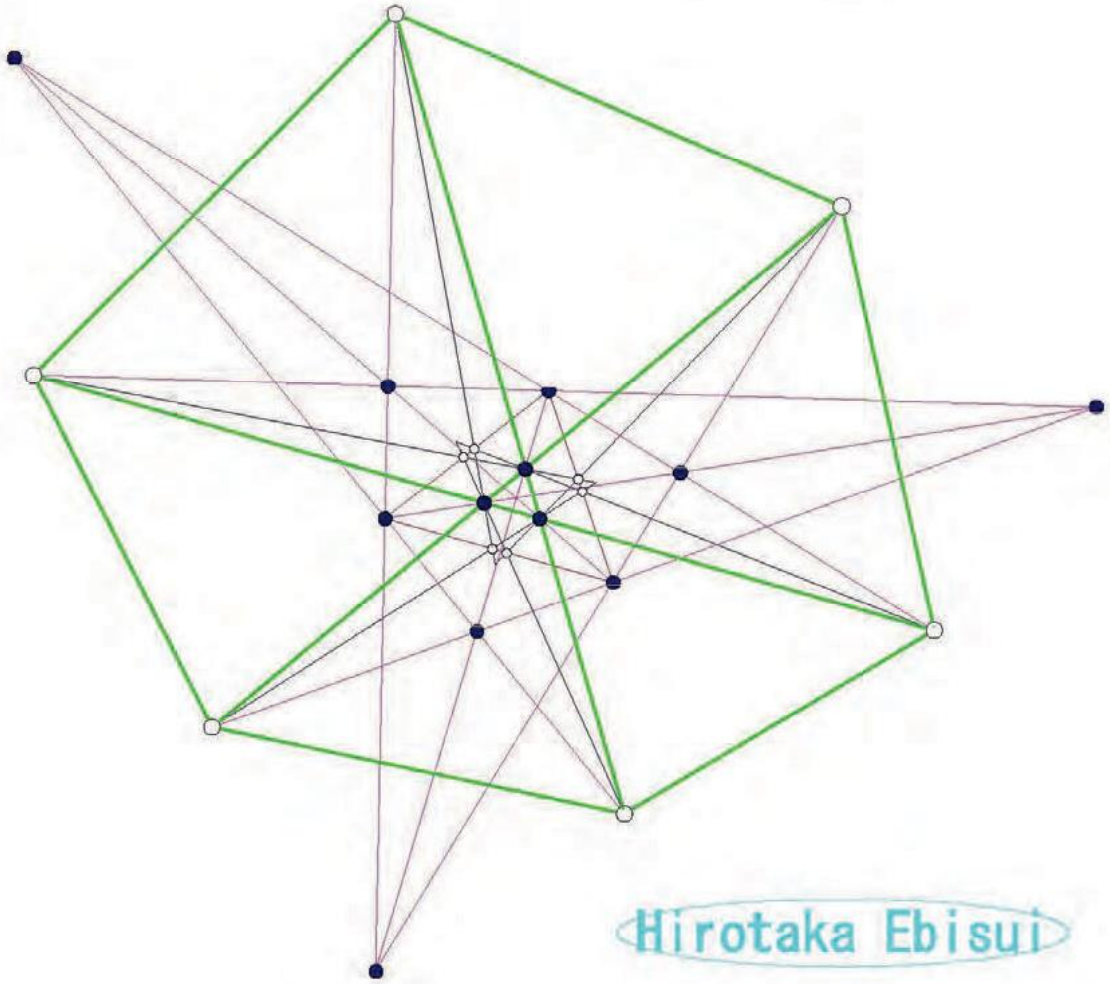
2020－7－26清書



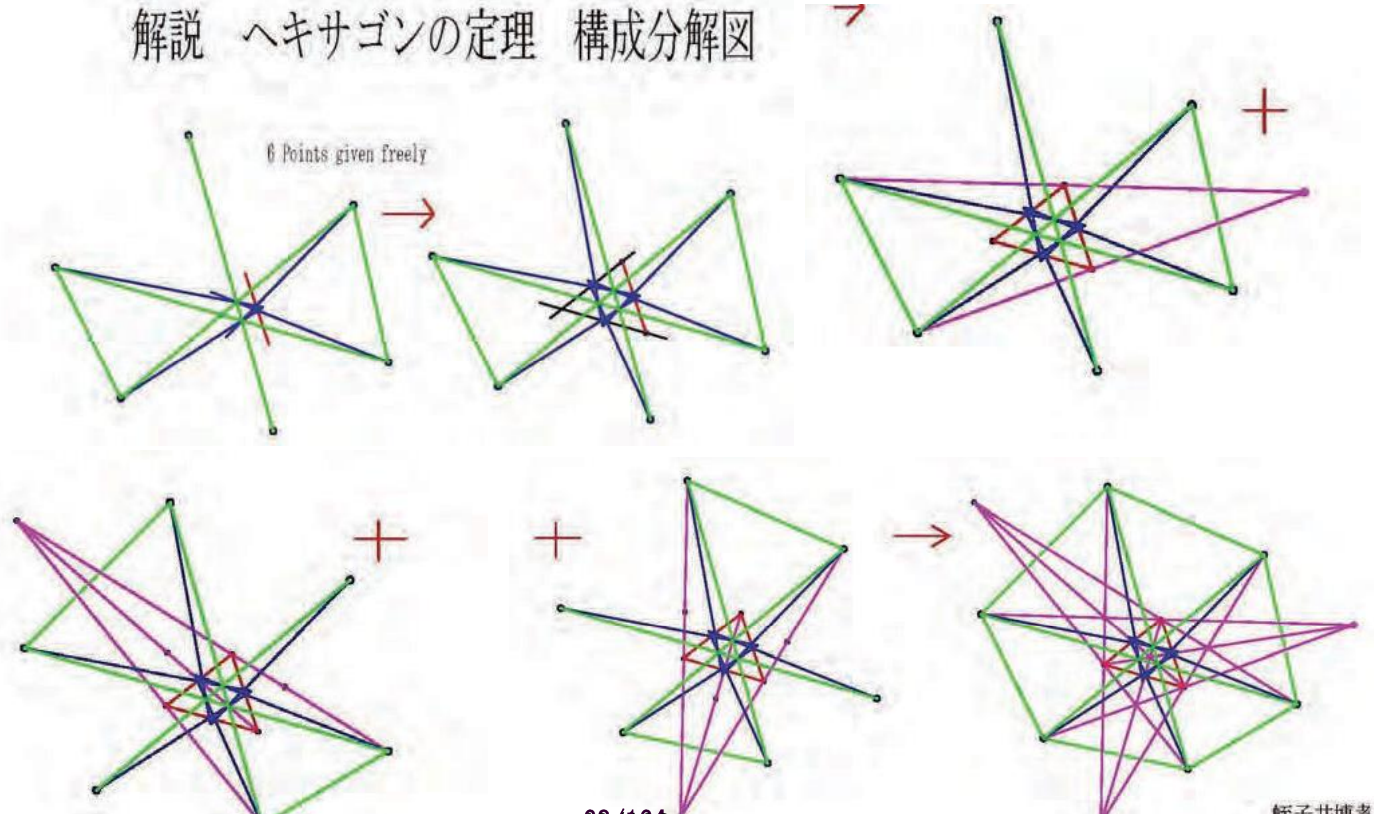
蛭子井博孝

HEXAGON THEOREM

6 Points given freely

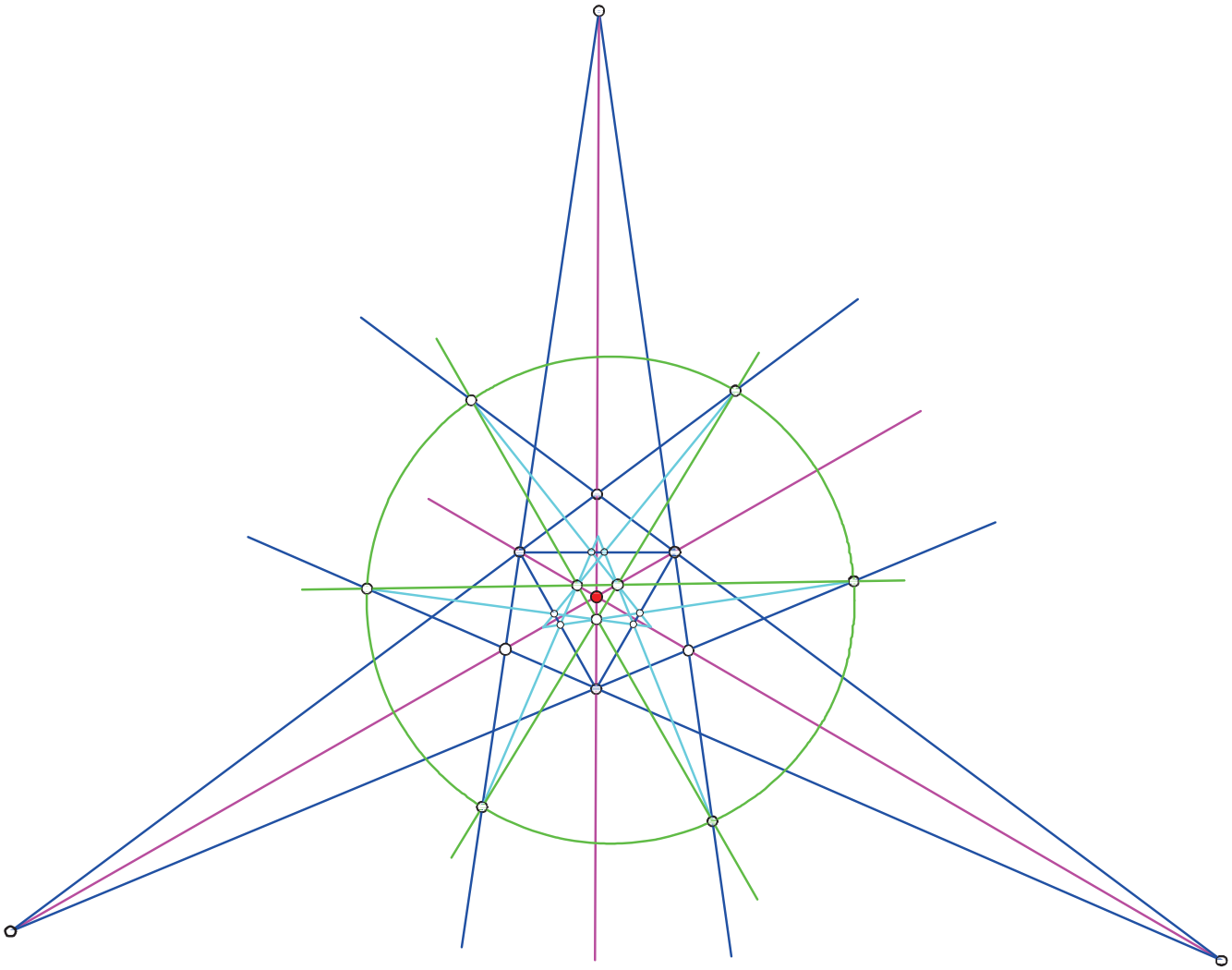


解説　ヘキサゴンの定理　構成分解図



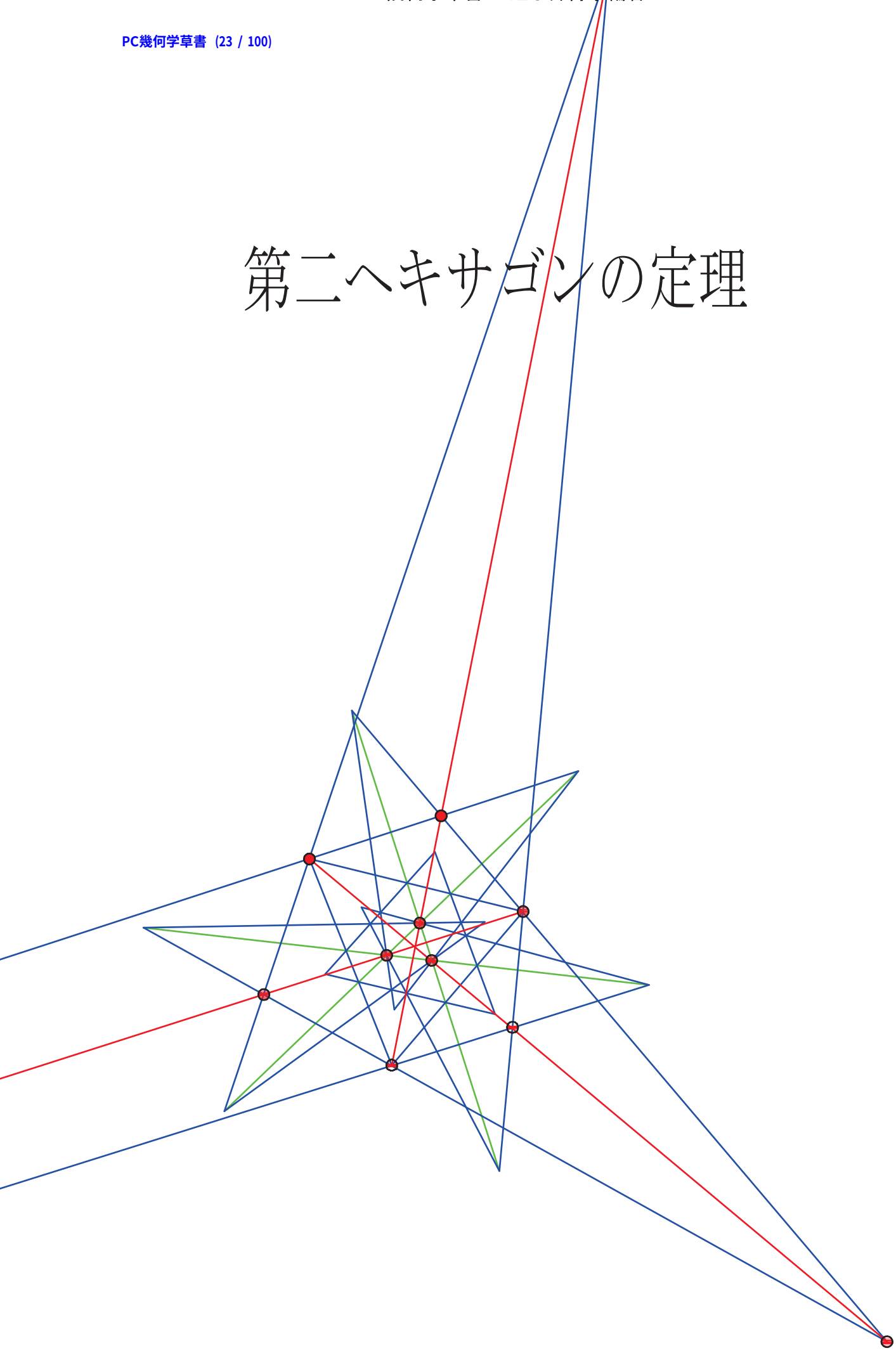
6’.HEXAGON 5 ten teiri

2011−9−6



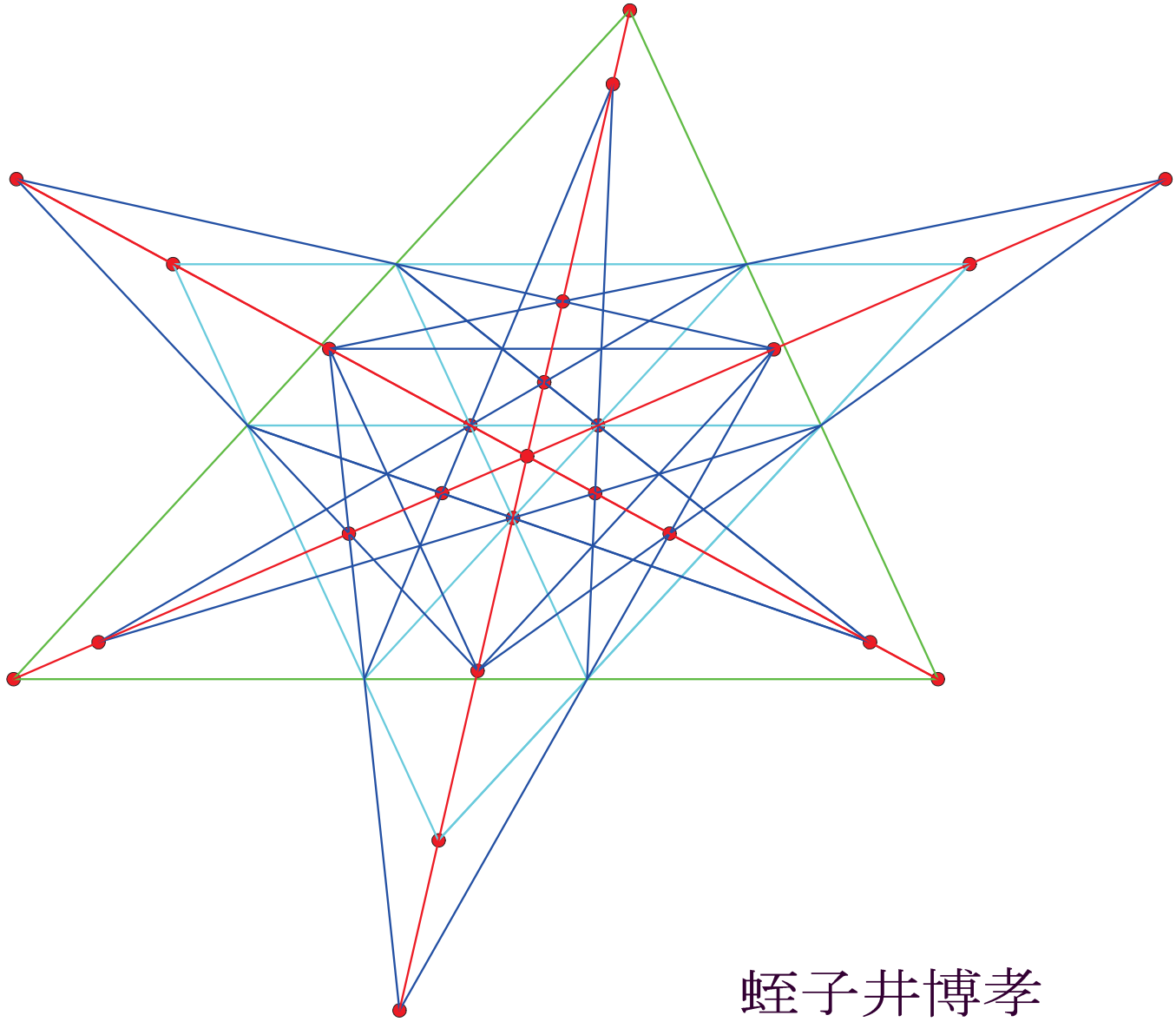
蛭子井博孝

第二ヘキサゴンの定理



三角形辺6本平行線9点共線3本組ヘキサゴン定理

2023－12－24再描清書

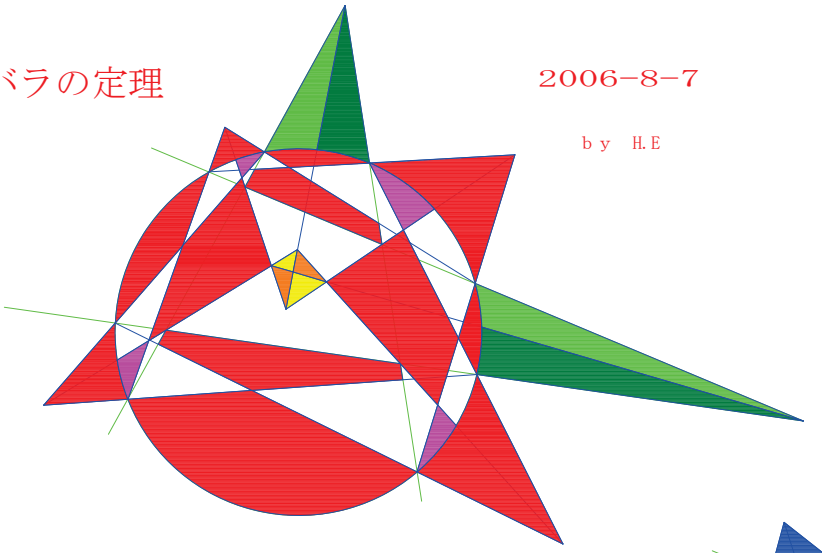


蛭子井博孝

バラの定理

2006−8−7

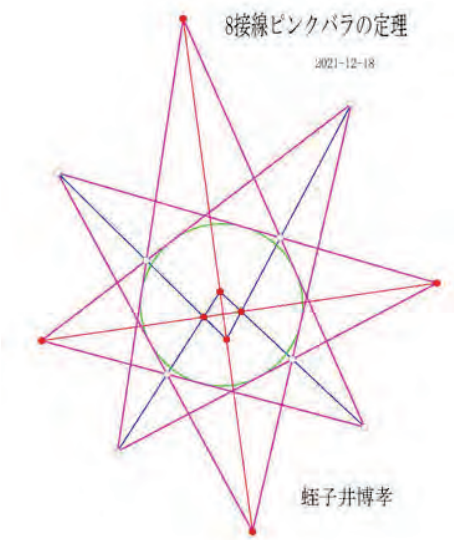
ｂｙ　H.E

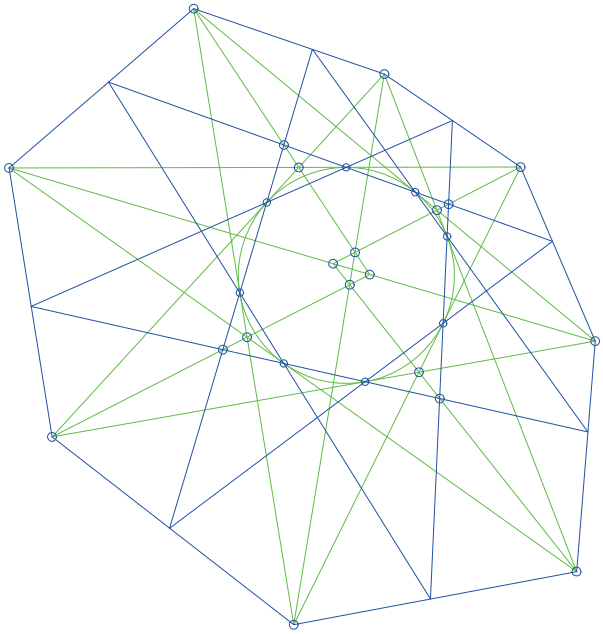


青バラの定理

2008−7−14

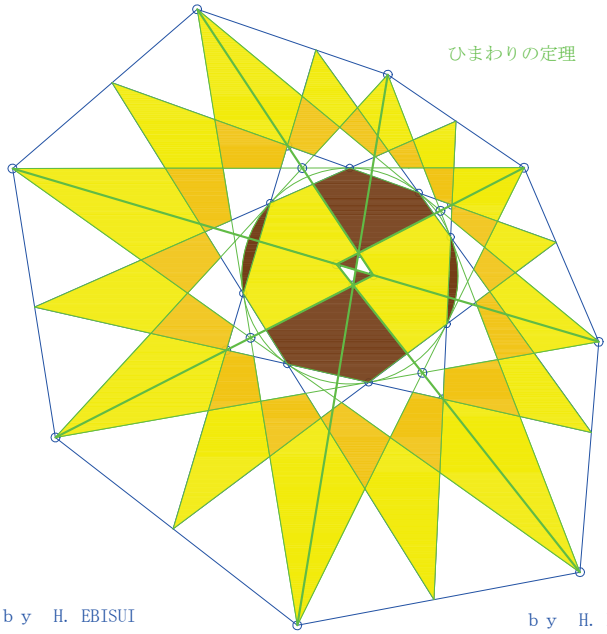
ｂｙ　H.E





ｂｙ　H. EBISUI

ひまわりの定理

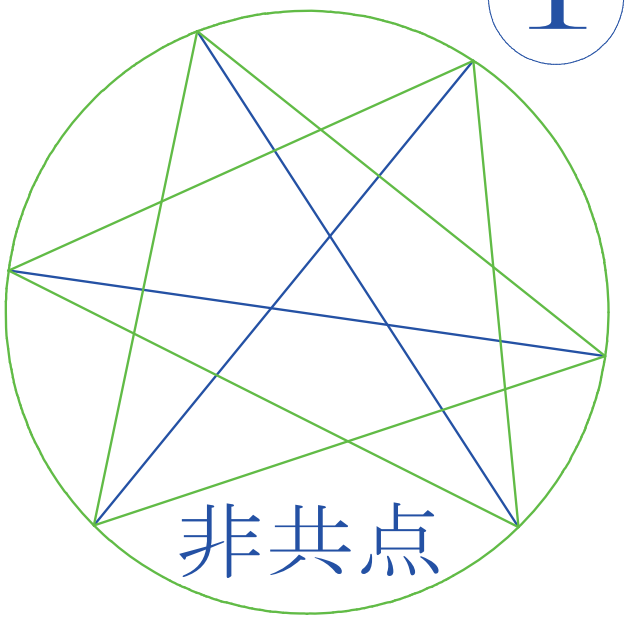


ｂｙ　H. EBISUI

星々内部交互性

HEXSTAR-0002

1



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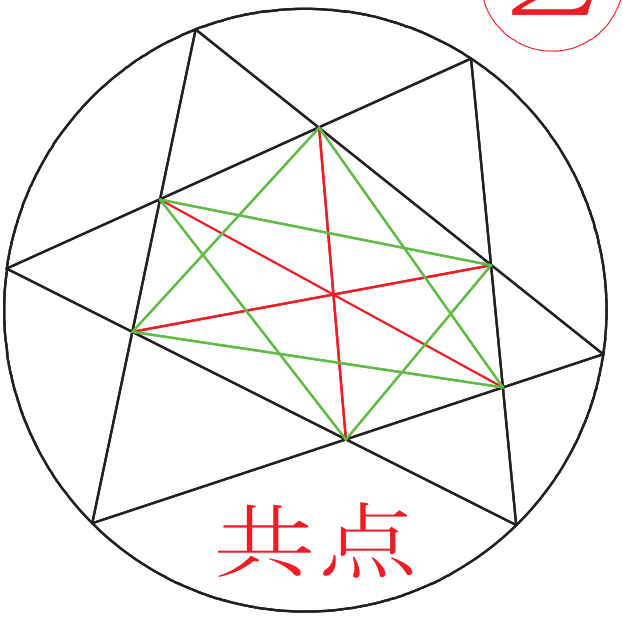

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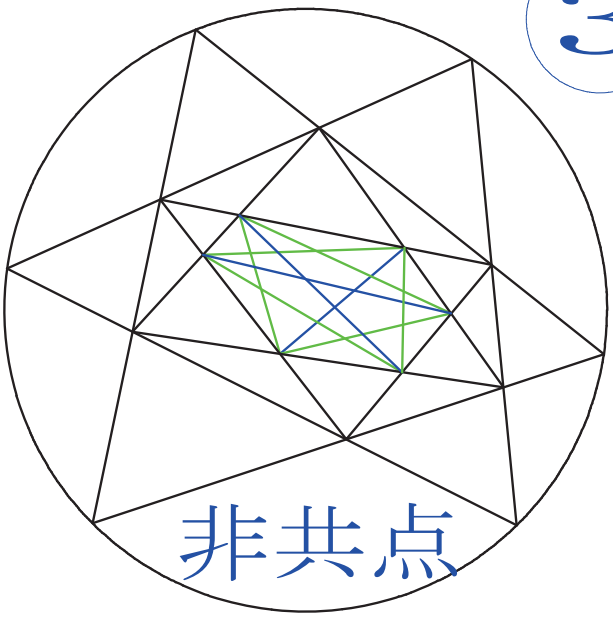

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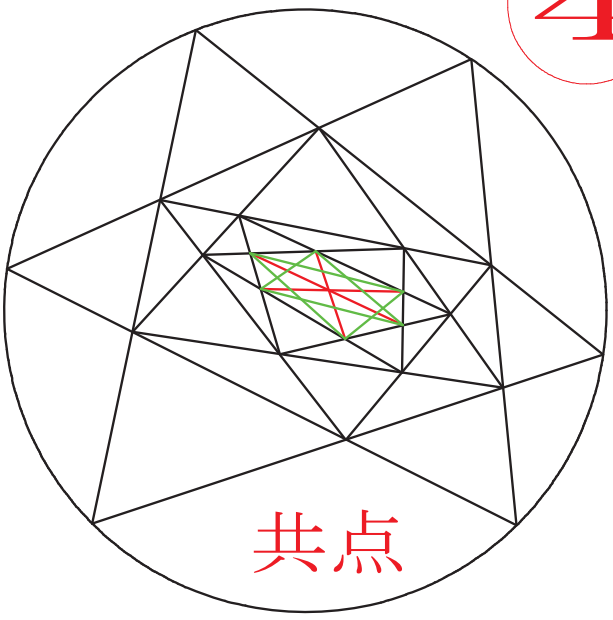
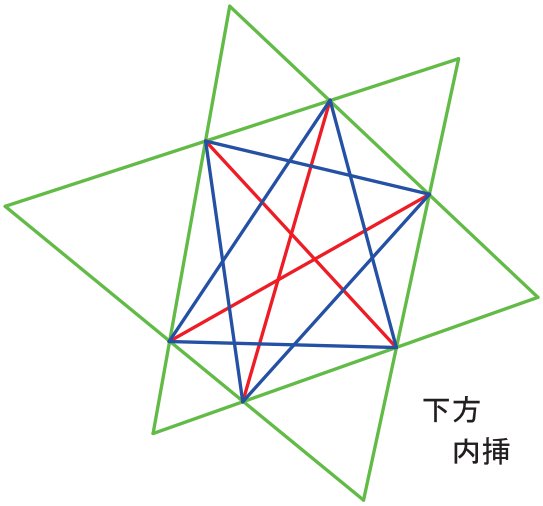


星々内部非共点・共点交互性

重ね合わせ三角形の構図問題



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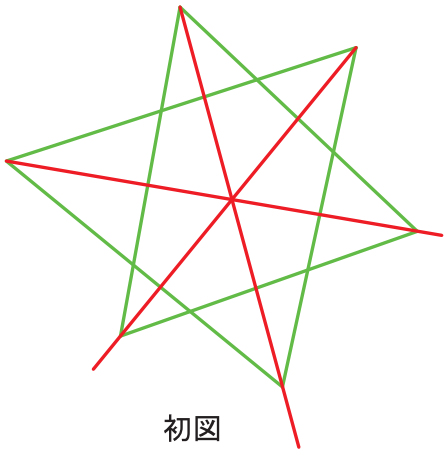
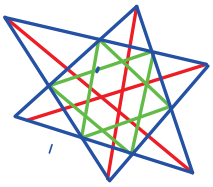
内挿



初図



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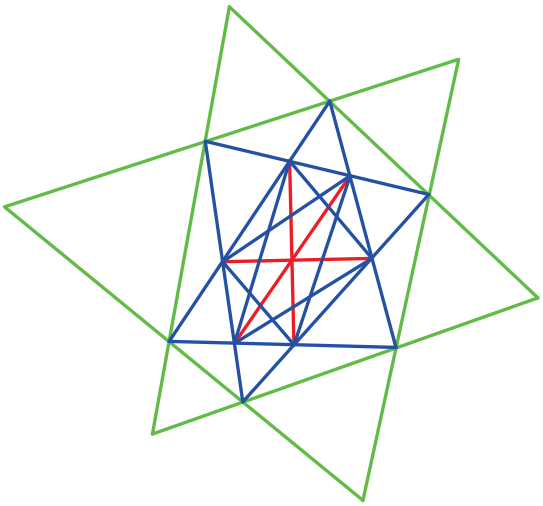
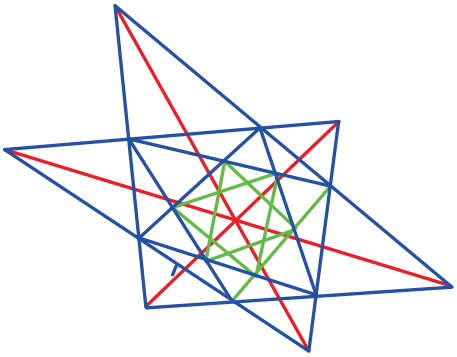
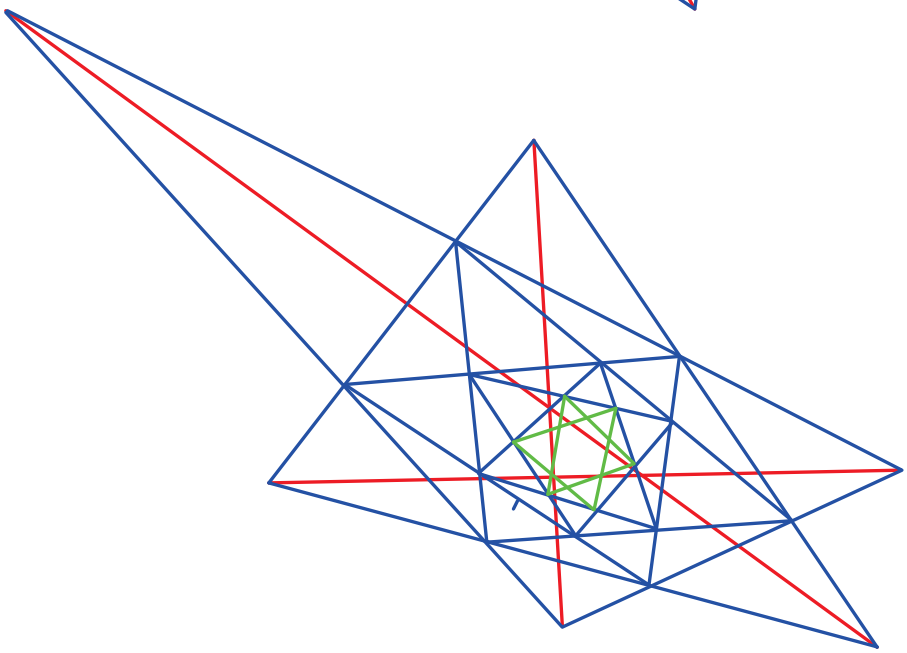
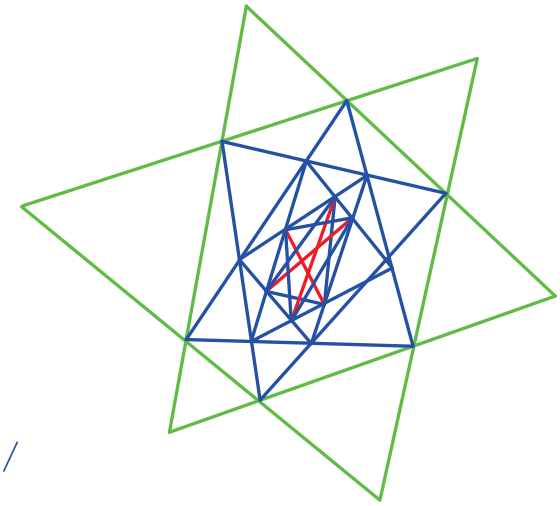






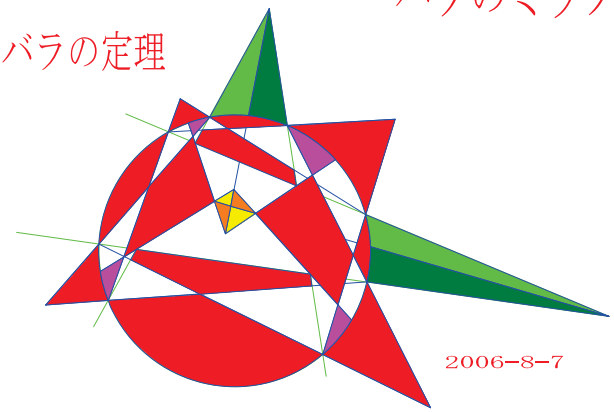


蛭子井博孝

バラのミックス定理

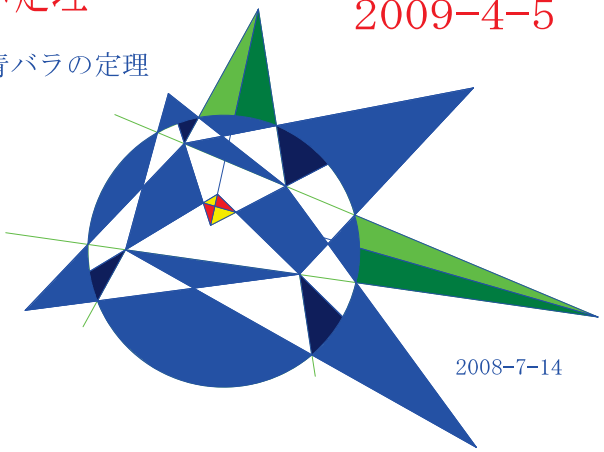
2009-4-5

赤バラの定理



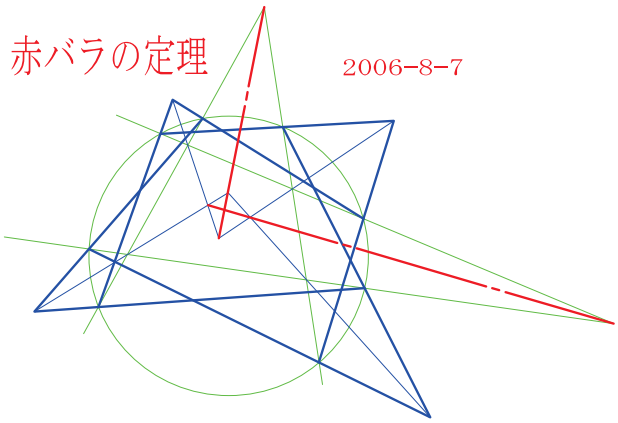
2006-8-7

青バラの定理

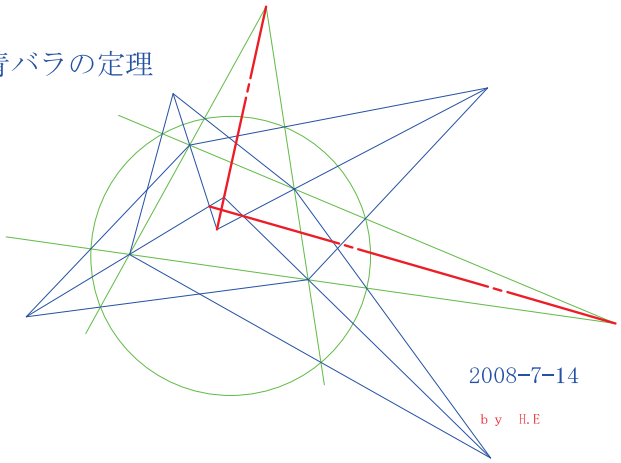


2008-7-14

赤バラの定理　2006-8-7



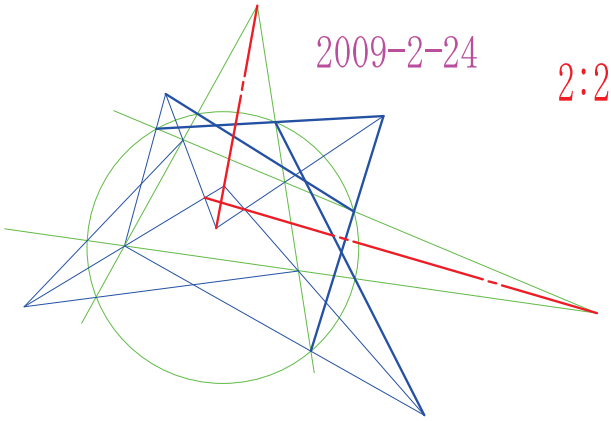
青バラの定理



2008-7-14

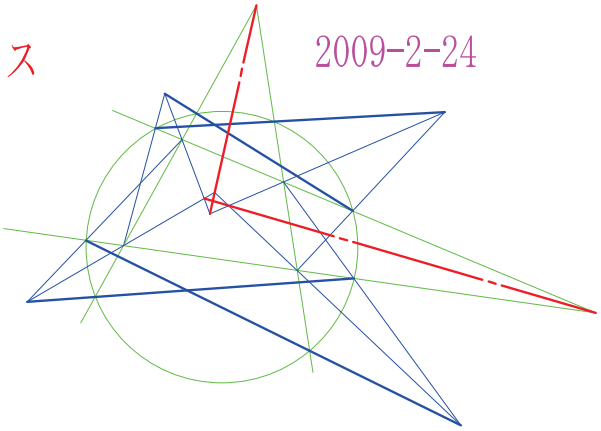
by H.E

2009-2-24



2:2ミックス

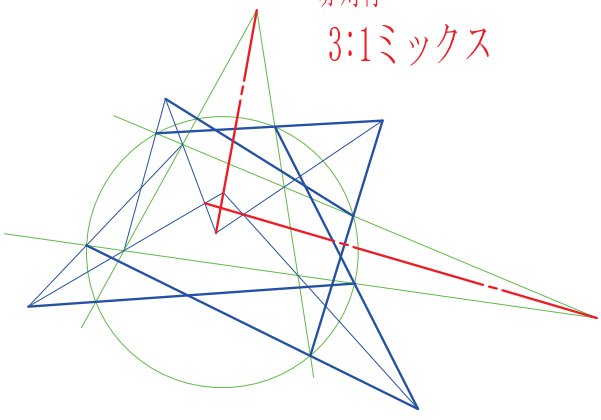
2009-2-24



発見とは、一瞬の合体である　一瞬に合体したら，論理の飛躍ができる

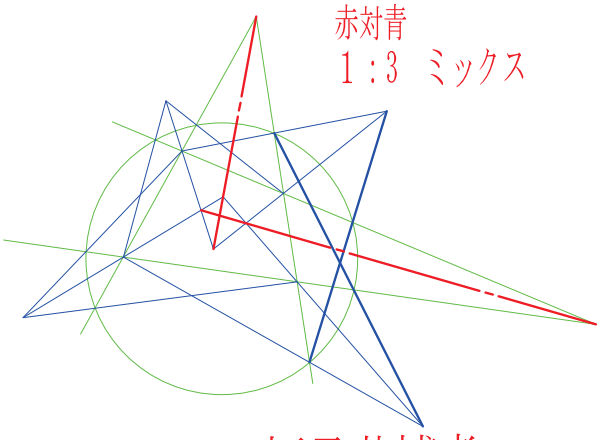
赤対青

3:1ミックス



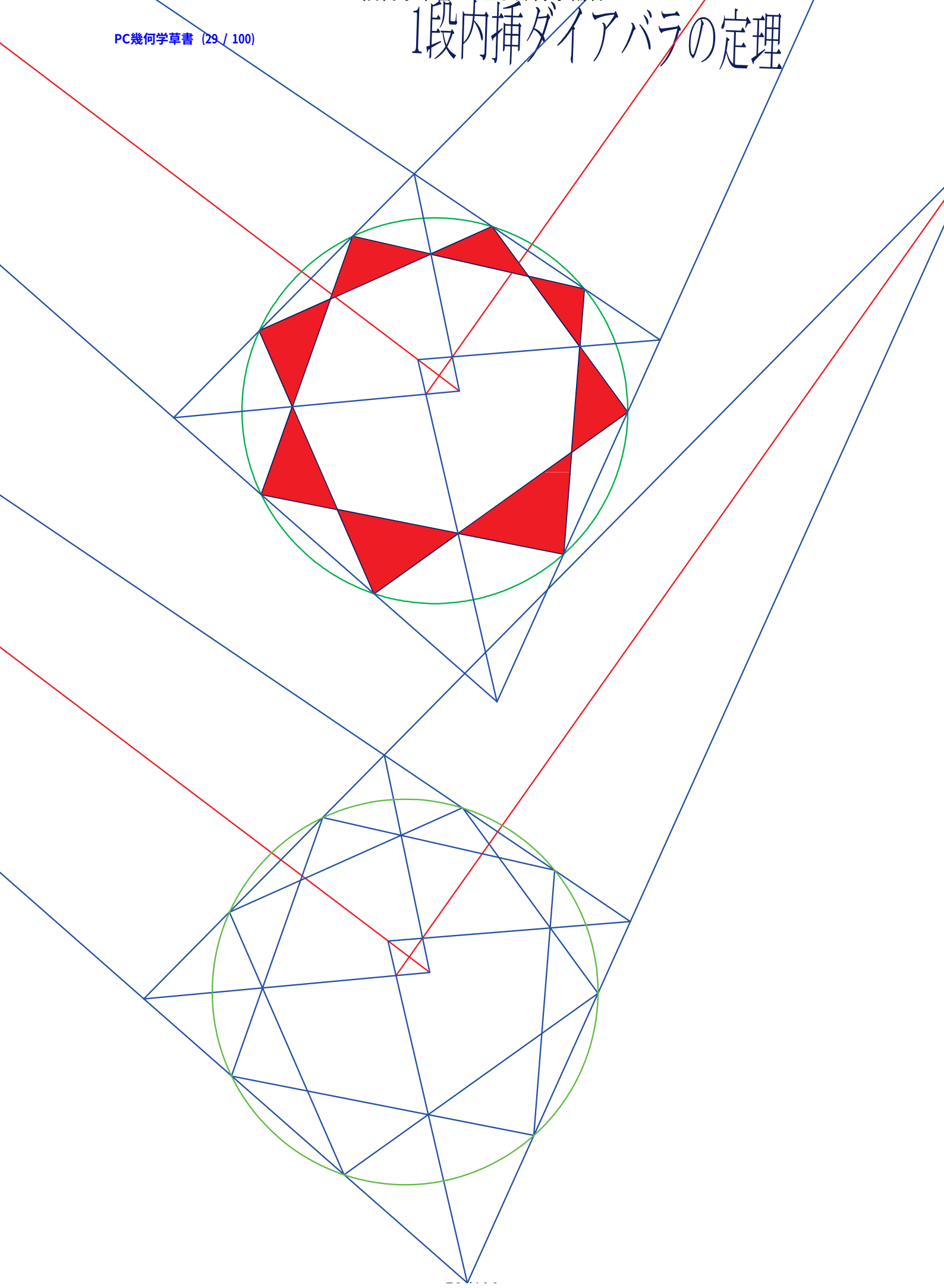
赤対青

1：3　ミックス



蛭子井博孝

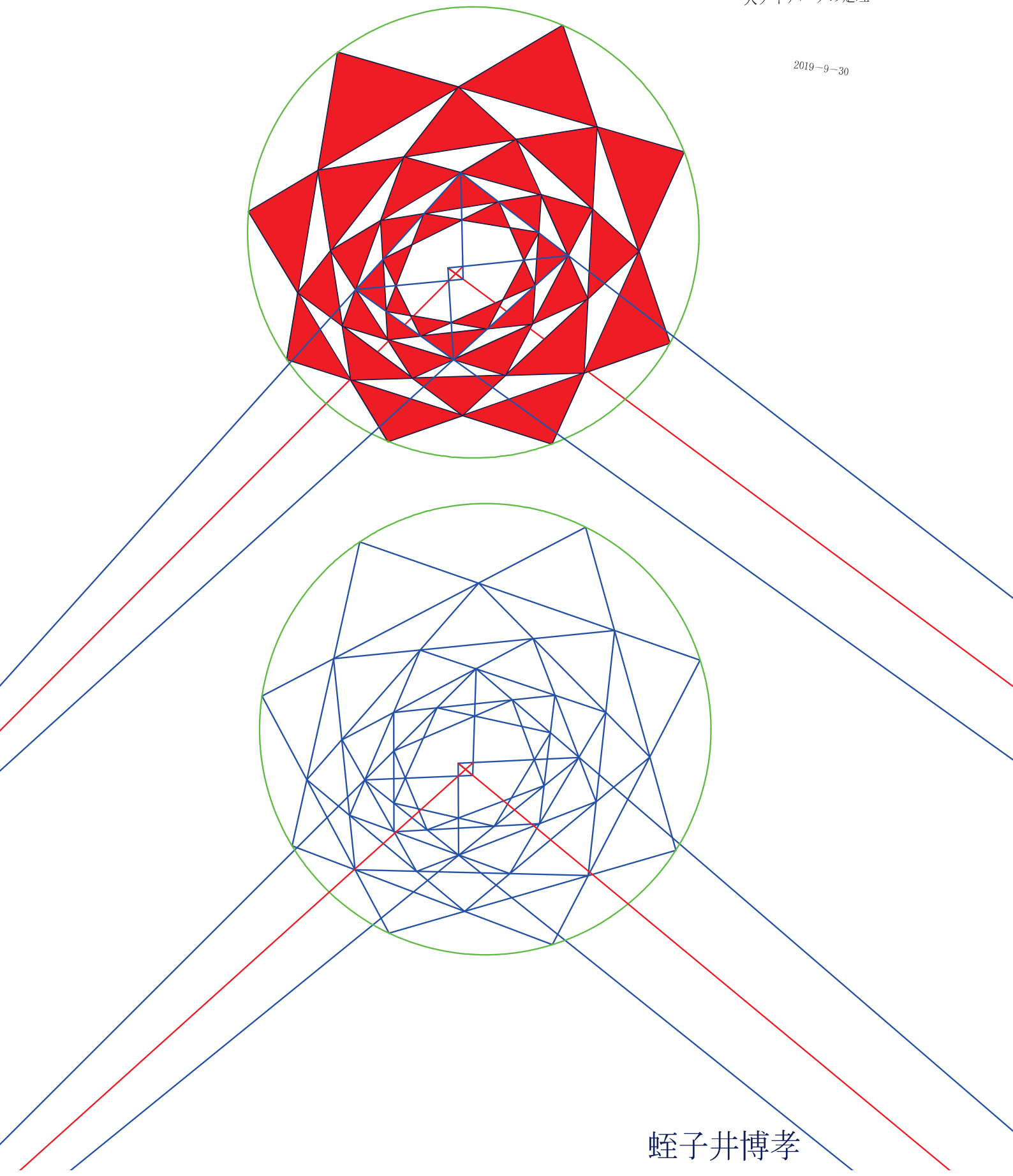
1段内挿ダイアバラの定理



5段内挿ダイアバラの定理

大ダイアバラの定理

2019−9−30

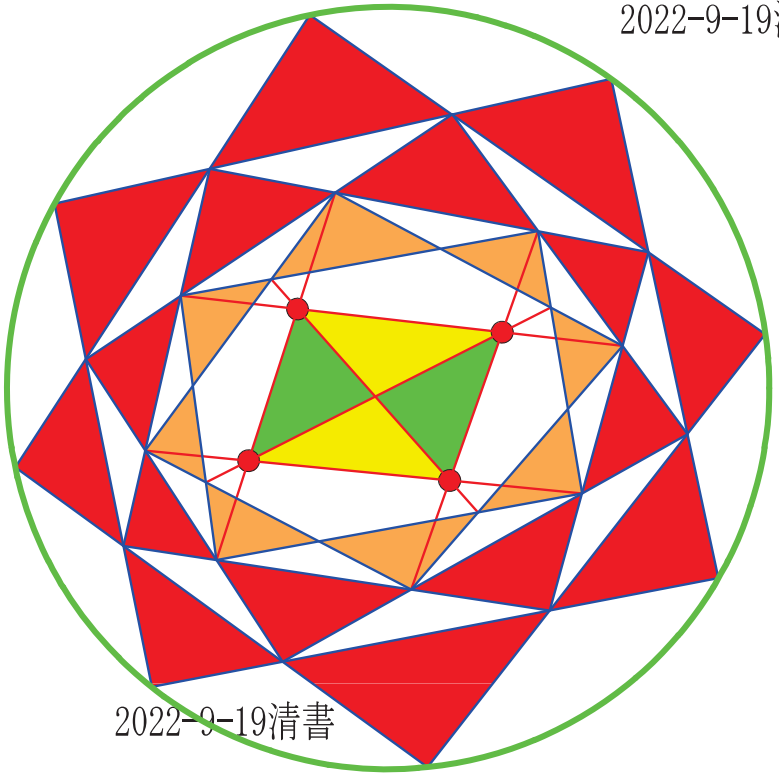


蛭子井博孝

TVIT　蛭子井博孝

バラ井桁4共点線の定理　e　by H.E

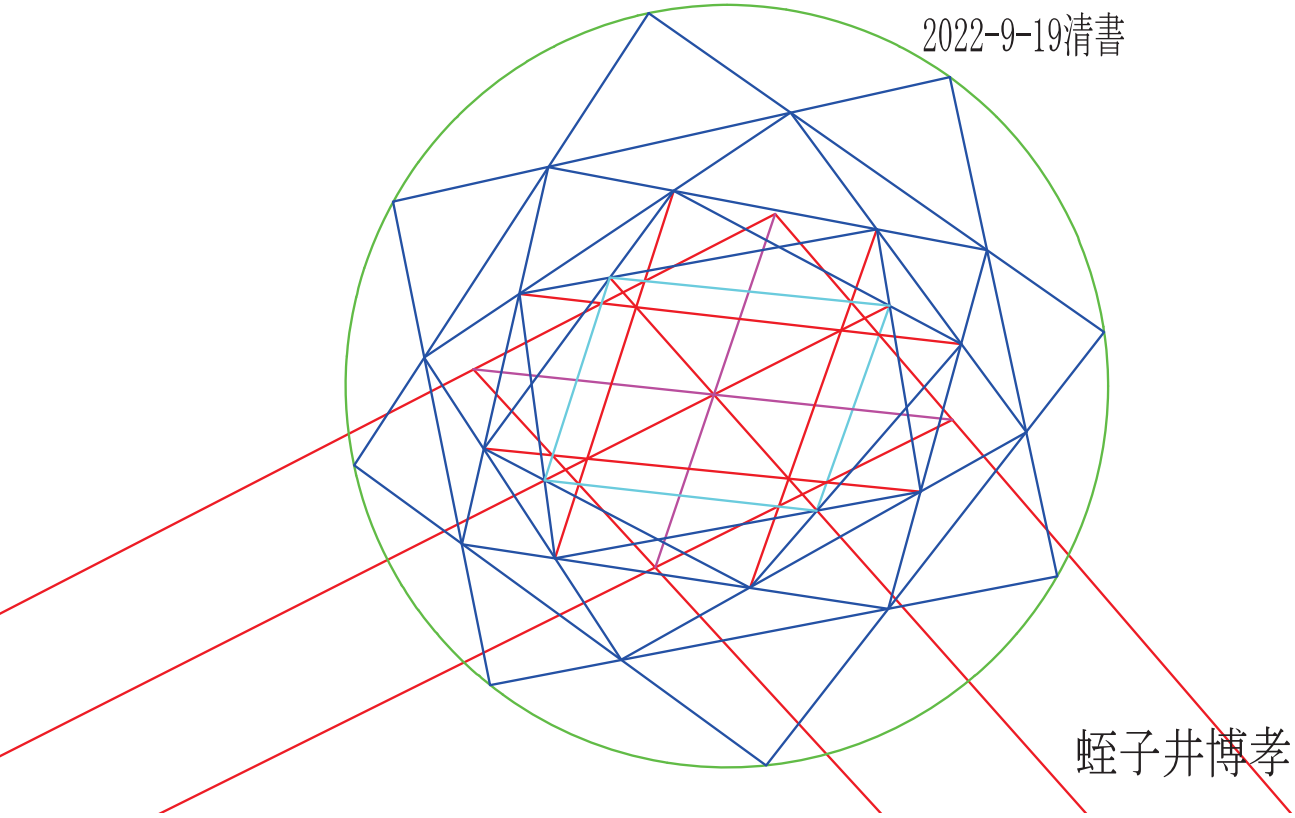
2022-9-19清書



2022-9-19清書

バラ井桁4共点線の定理　h　by H.E

2022-9-19清書



蛭子井博孝

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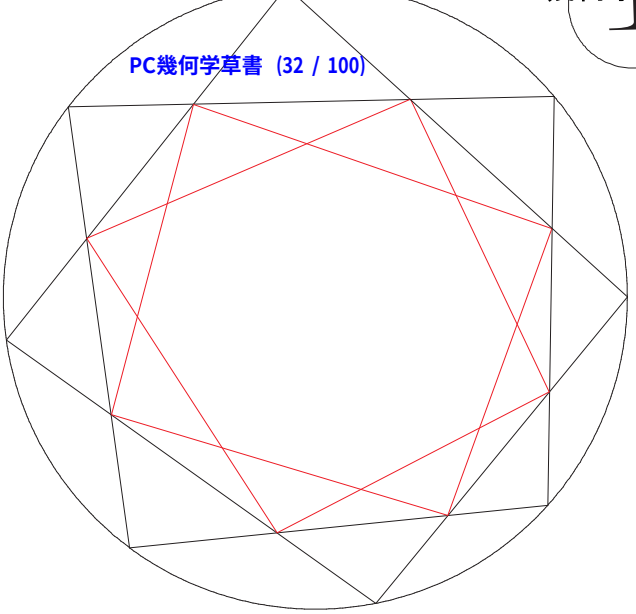

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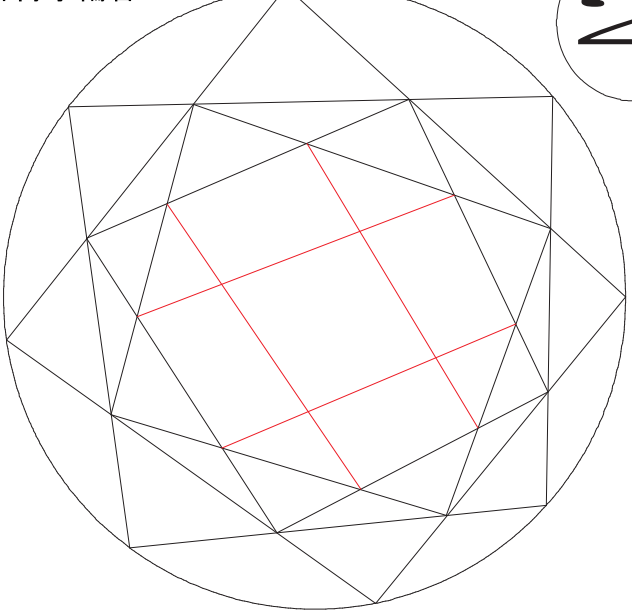
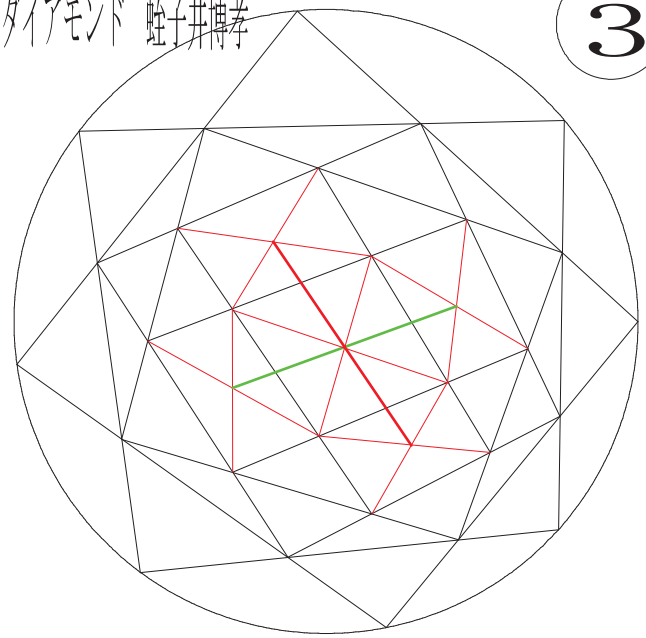


八角形ダイアモンド　蛭子井博孝

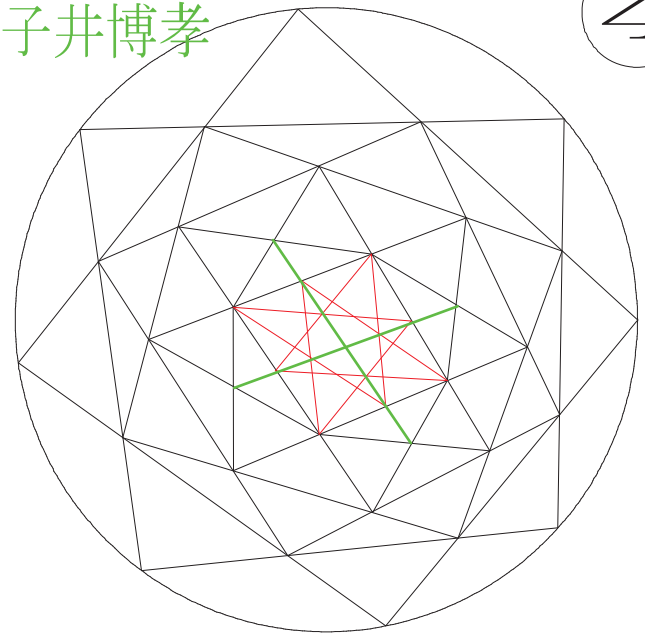
3



グリーンダイアの定理

蛭子井博孝

4



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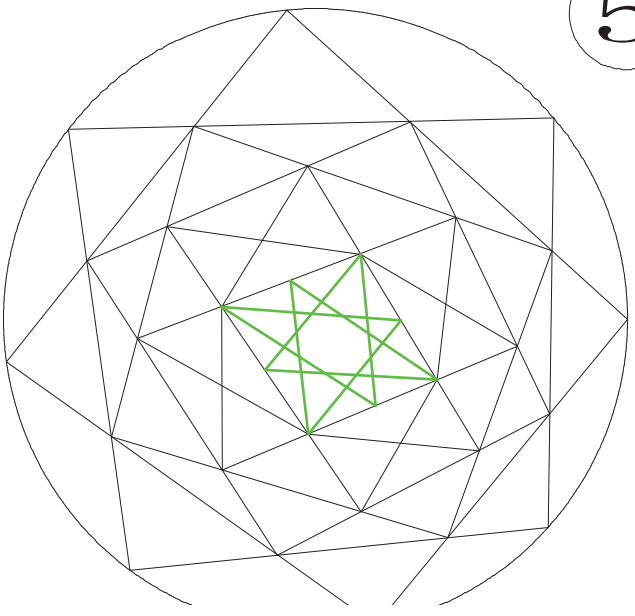
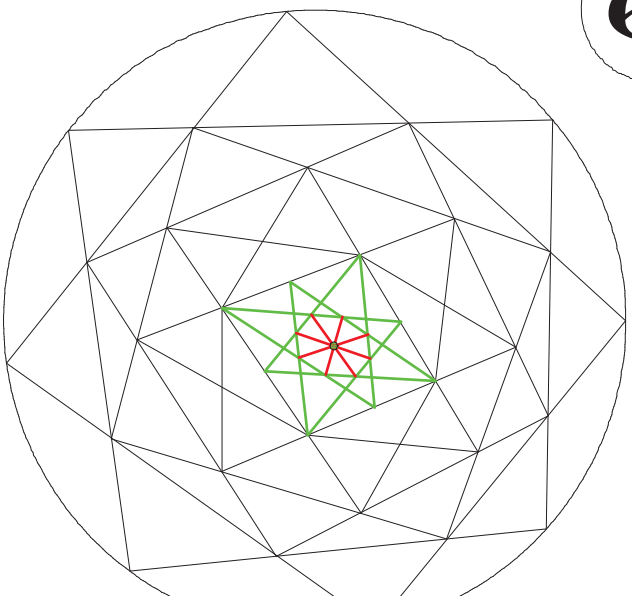


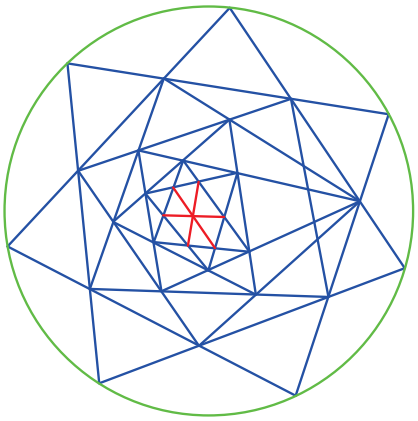
2021-1-13　分解清書

6



7角形星々交互連鎖定理

2022-9-15



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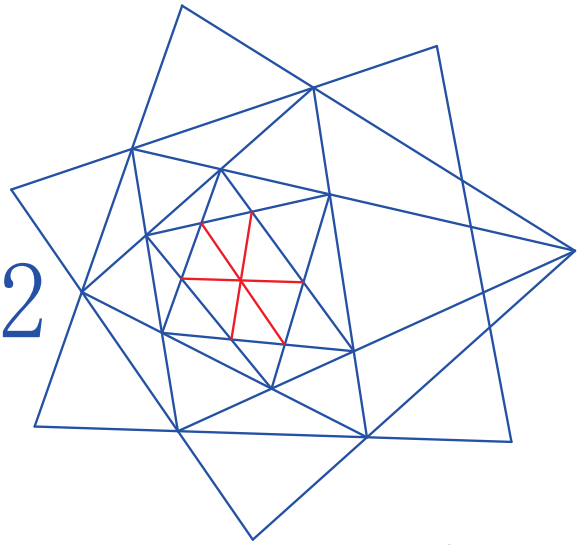

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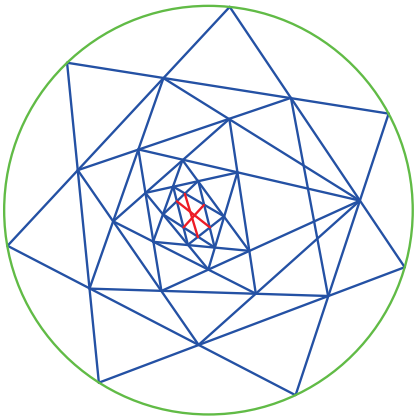
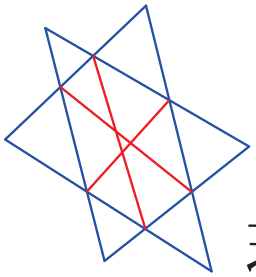
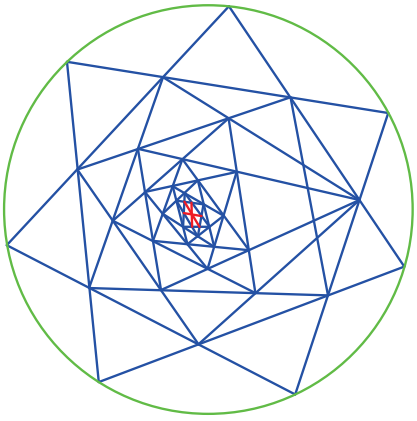


x4



非共点



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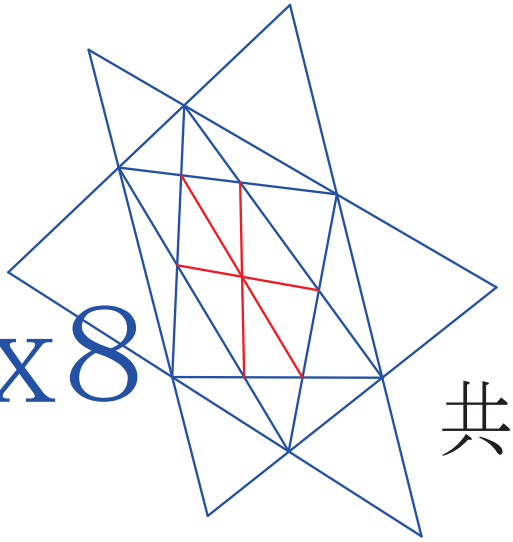


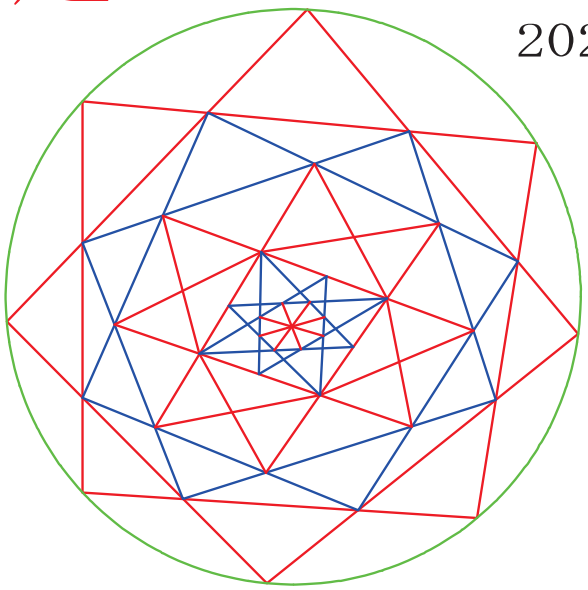
共点

蛭子井博孝

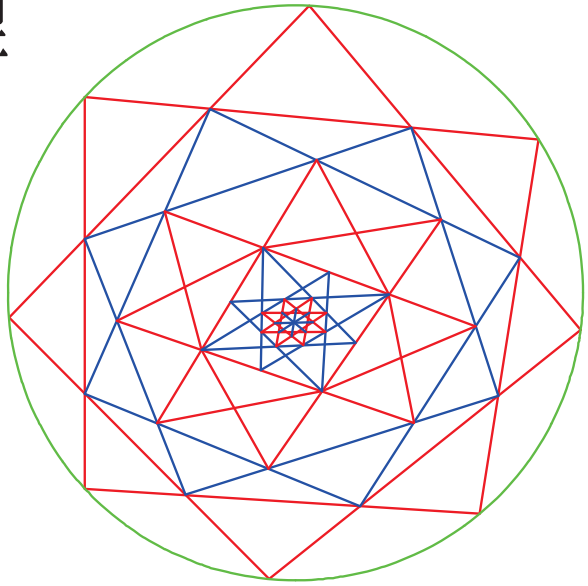
4線共点定理

2022-5-8

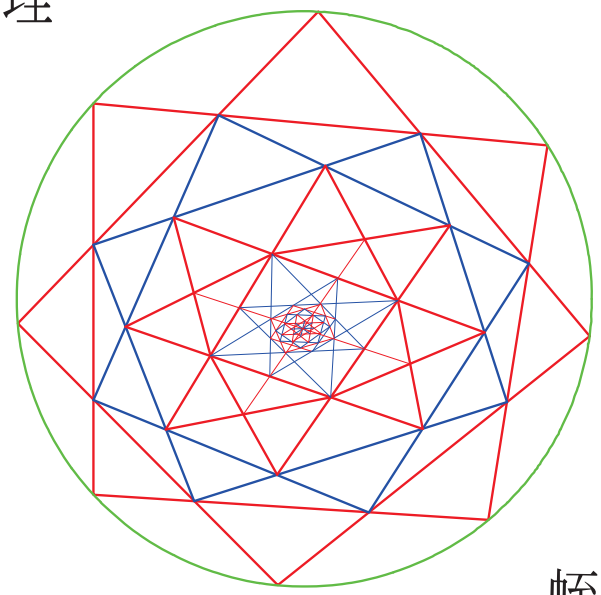
赤青5層4線共点定理



赤青6層4線共点定理



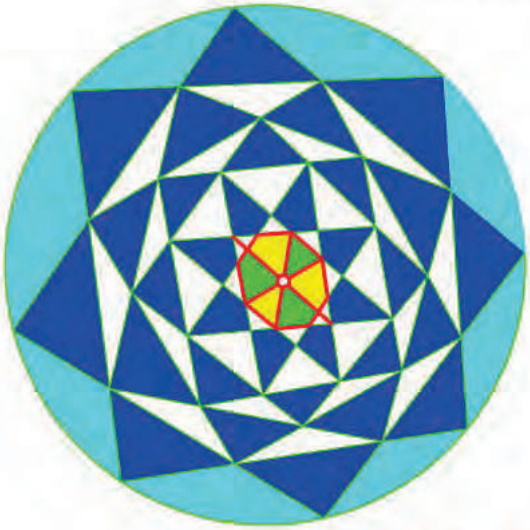
赤青8層4線共点定理



蛭子井博孝

青ダリアの共点定理

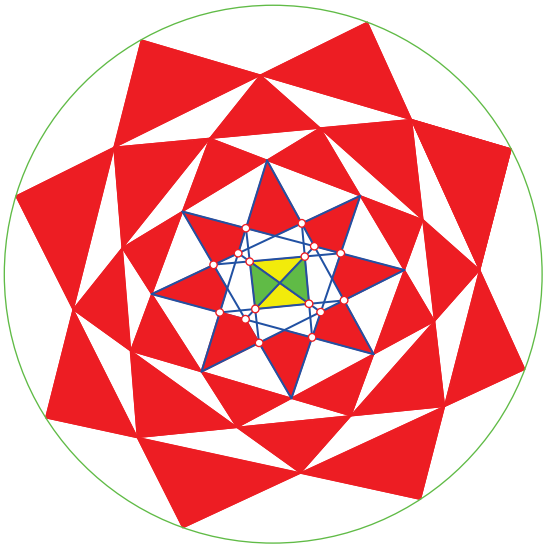
2022年3月18日(金)



蛭子井博孝

赤ダリア4点共線定理

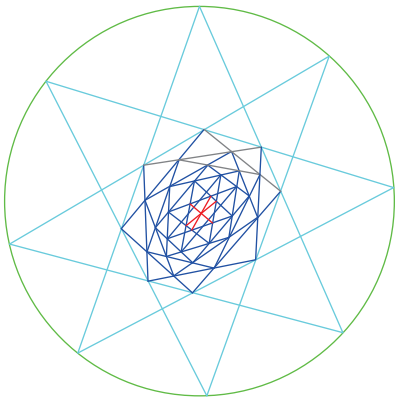
2022−3−18



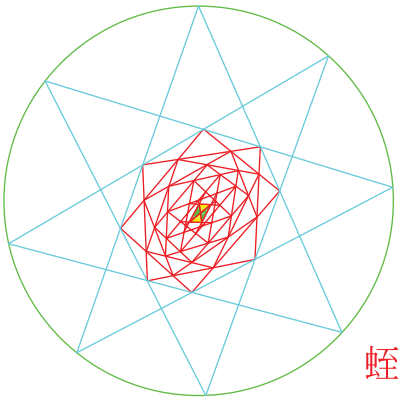
蛭子井博孝

スター青ダリアの共点定理

2022−3−18



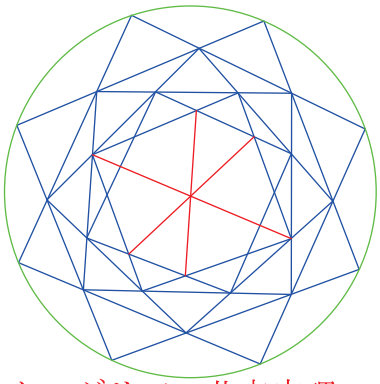
スター赤ダリアの4点共線 (ダリアバラの定理)



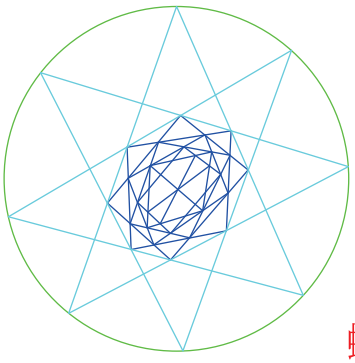
蛭子井博孝

ダリアの共点定理

2022−3−18



スターダリアの共点定理

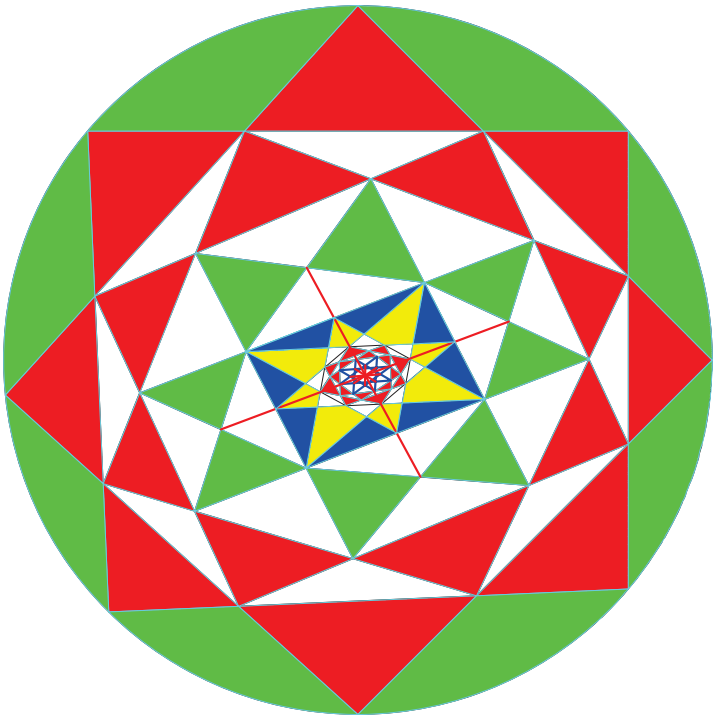


蛭子井博孝

H.Eの七色の6角形の共点定理

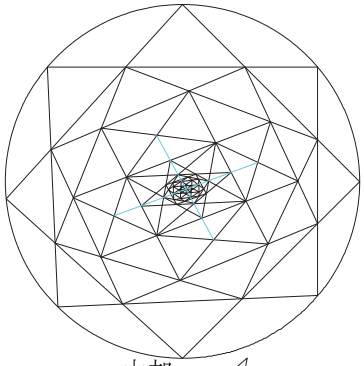
2022-11-17清書

蛭子井博孝の4線共点定理　２０２２−４−２６

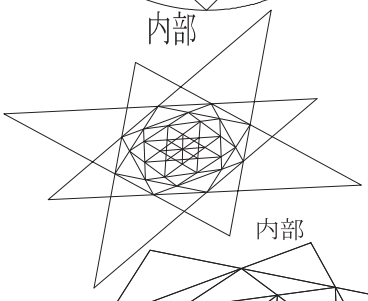


微細構造定理定然

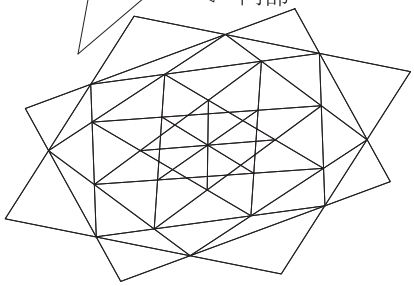
蛭子井博孝の4線共点定理　２０２２−４−２６



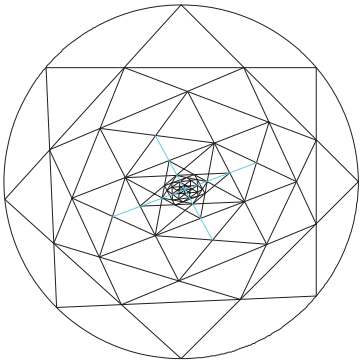
内部



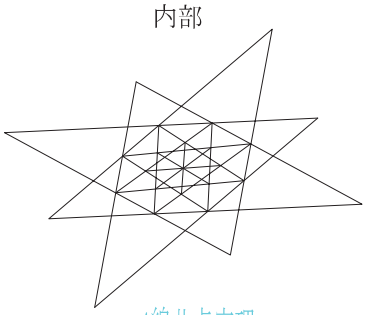
内部



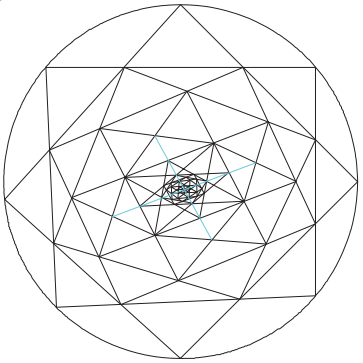
4線共点定理



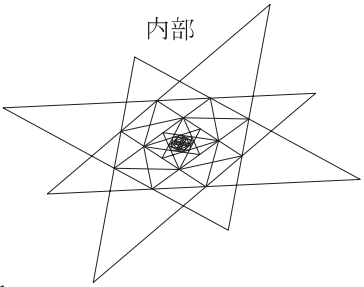
内部



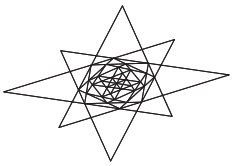
4線共点定理



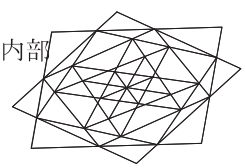
内部



内部



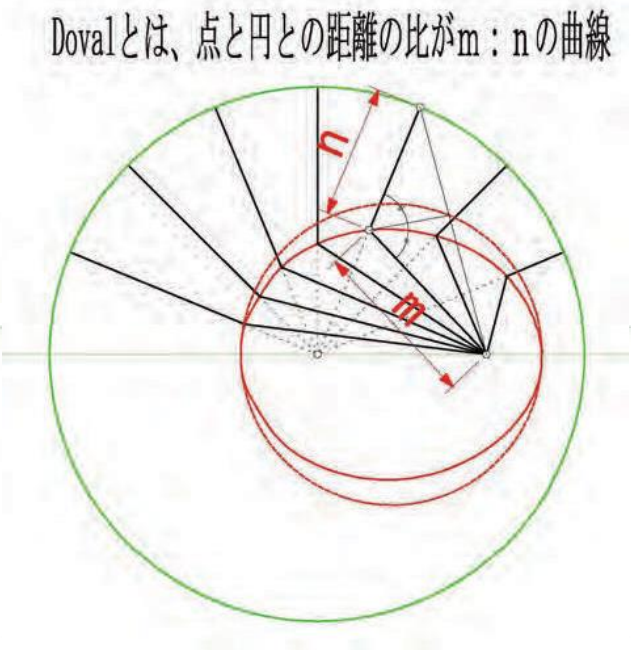
内部

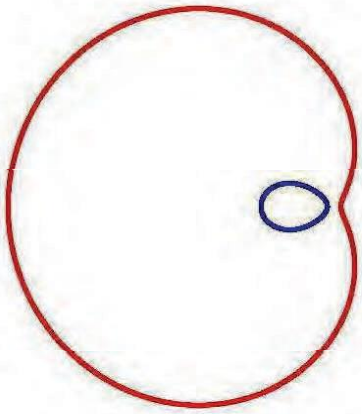


4線共点定理

第3章　楕円の一般化　:Tajicoid

OHVALとは、点と円からの距離の比が一定な曲線





楕円の一般化曲線4次曲線

左右離心率　[0.6 , 0.9]

下式　定義式　にて作描

1 ----Standard Form of Doval Equation--

$mr_1 \pm nr_2 = kc$　　is　converted　to　following

この変換は、紙面上で、手計算で、13時間かけてやったもので、pcソフトでは、実行できていない

$$極座標系RS = \frac{C\left(MK - N^2\cos(s) - N\sqrt{N^2\cos(s)^2 - 2KM\cos(s) + K^2 + M^2 - N^2}\right)}{M^2 - N^2}$$

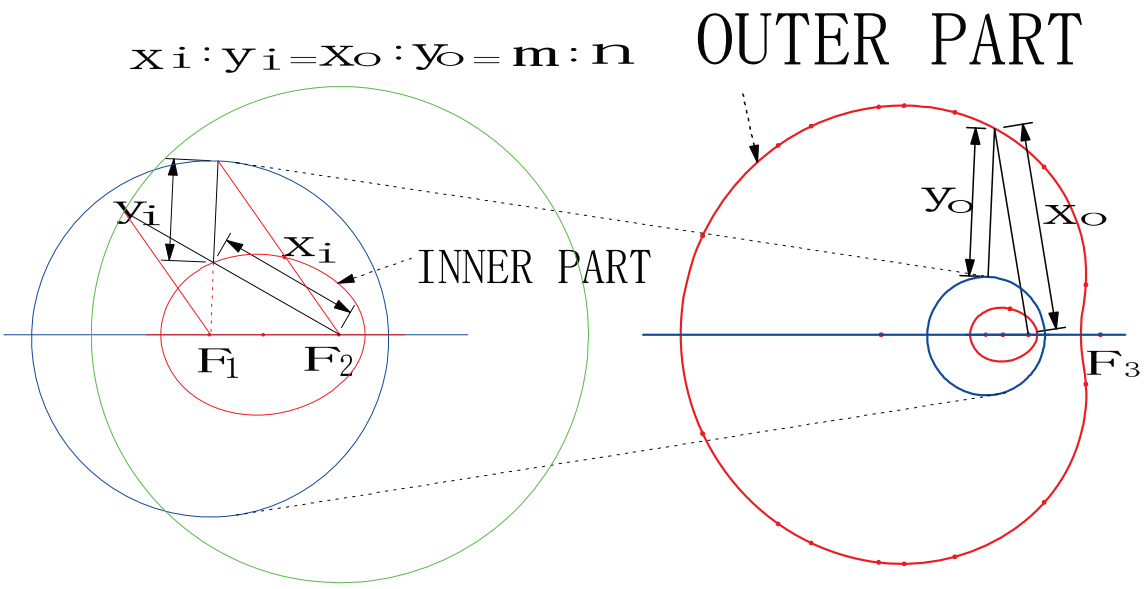
$$XY座標系 = \left(\left(m^2 - n^2\right)^2\left(y^2 + \left(x + \frac{n^2 c}{m^2 - n^2}\right)^2 - \frac{\left(k^2 m^2 + k^2 n^2 + m^2 n^2\right)c^2}{\left(m^2 - n^2\right)^2}\right)^2 = \right.$$

$$\left. - \frac{8k^2 m^2 n^2 c^3\left(x + \frac{n^2 c}{m^2 - n^2}\right)}{m^2 - n^2} + \frac{4k^2 m^2 n^2\left(k^2 + m^2 + n^2\right)c^4}{\left(m^2 - n^2\right)^2}\right)$$

2． Definition of OHval

We call inner and outer part of the Oval as OHVAL

Inner and Outer Part of the Oval



$$m r_1 \pm n r_2 = k c$$

Radius of Director circle = kc/m,　kc/n

Ohval 主要定数　k>m>n>0の任意定数

右離心率=m/k　左離心率=n/k

焦点間距離　F1F2= c

F1F3=(k^2-n^2)/(m^2-n^2)・c

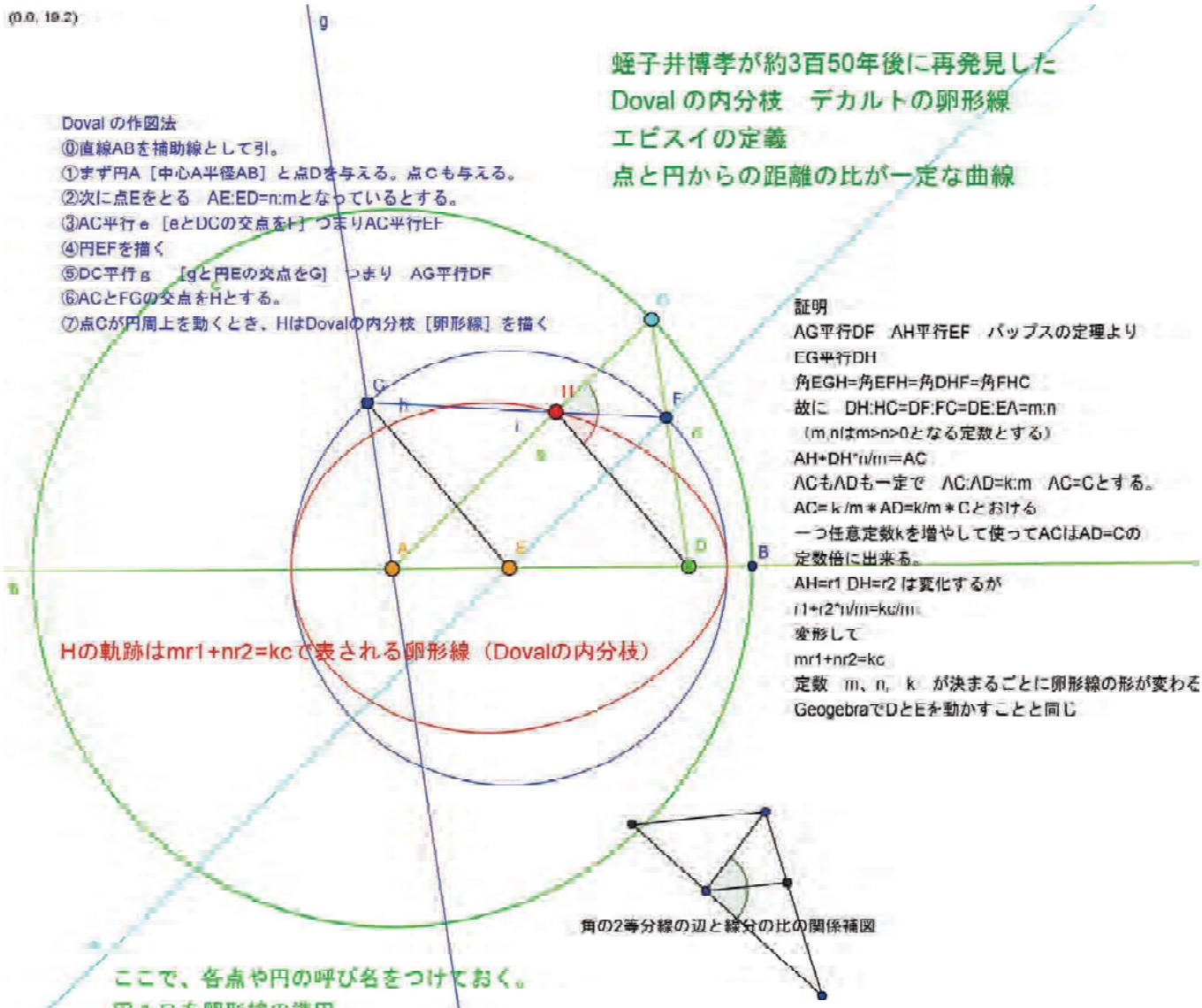
等距離円　中心(-n^2c/(m^2-n^2),0)

３つの半径

kmc/(m^2-n^2)　knc/(m^2-n^2)　mnc/(m^2-n^2)

Dovalの双極座標表示式

蛭子井博孝 740-0012 岩国市元町4丁目12-10 1950-04-20生まれ━0827-22-3305



蛭子井博孝が約3百50年後に再発見した
Dovalの内分枝　デカルトの卵形線
エビスイの定義
点と円からの距離の比が一定な曲線

Dovalの作図法
⓪直線ABを補助線として引。
①まず円A［中心A半径AB］と点Dを与える。点Cも与える。
②次に点Eをとる　AE:ED=n:mとなっているとする。
③AC平行e［eとDCの交点をF］つまりAC平行EF
④円EFを描く
⑤DC平行g　［gと円Eの交点をG］つまり　AG平行DF
⑥ACとFGの交点をHとする。
⑦点Cが円周上を動くとき、HはDovalの内分枝［卵形線］を描く

証明
AG平行DF　AH平行EF　パップスの定理より
EG平行DH
角EGH=角EFH=角DHF=角FHC
故に　DH:HC=DF:FC=DE:EA=m:n
（m,nはm>n>0となる定数とする）
AH*DH^n/m=AC
ACもADも一定で　AC:AD=k:m　AC=Cとする。
AC=k/m＊AD=k/m＊Cとおける
一つ任意定数kを増やして使ってACはAD=Cの
定数倍に出来る。
AH=r1 DH=r2 は変化するが
r1*r2^n/m=kc/m
変形して
mr1+nr2=kc
定数　m、n、k　が決まるごとに卵形線の形が変わる
GeogebraでDとEを動かすことと同じ

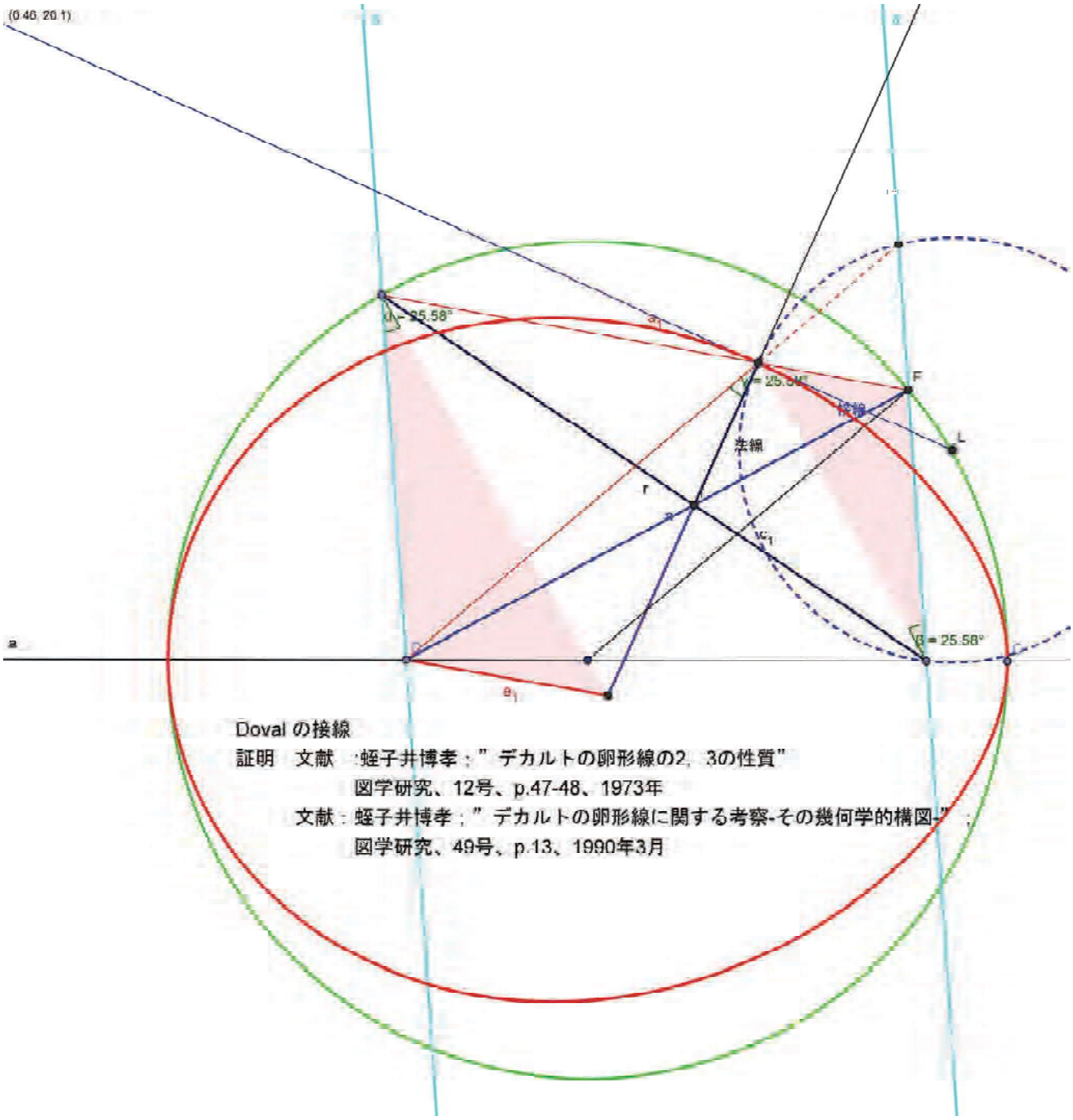
Hの軌跡はmr1+nr2=kcで表される卵形線（Dovalの内分枝）

角の2等分線の辺と線分の比の関係補図

ここで、各点や円の呼び名をつけておく。
円ＡＢを卵形線の準円
円ＥＦを卵形線の補助円　　ED/EF=m/kを右離心率ER
Ａを第一焦点Ｆ１　　EA/EF=n/kを左離心率ELと呼ぶ
Ｄを第二焦点Ｆ２という
卵形線の形は、k,m,nの値で構図が決まるから
左右の離心率の値で決まる。言い換えると
補助円内のF1、F2の位置で決まる

Doval Tangent Proof 2

蛭子井博孝 - 2014-12-28



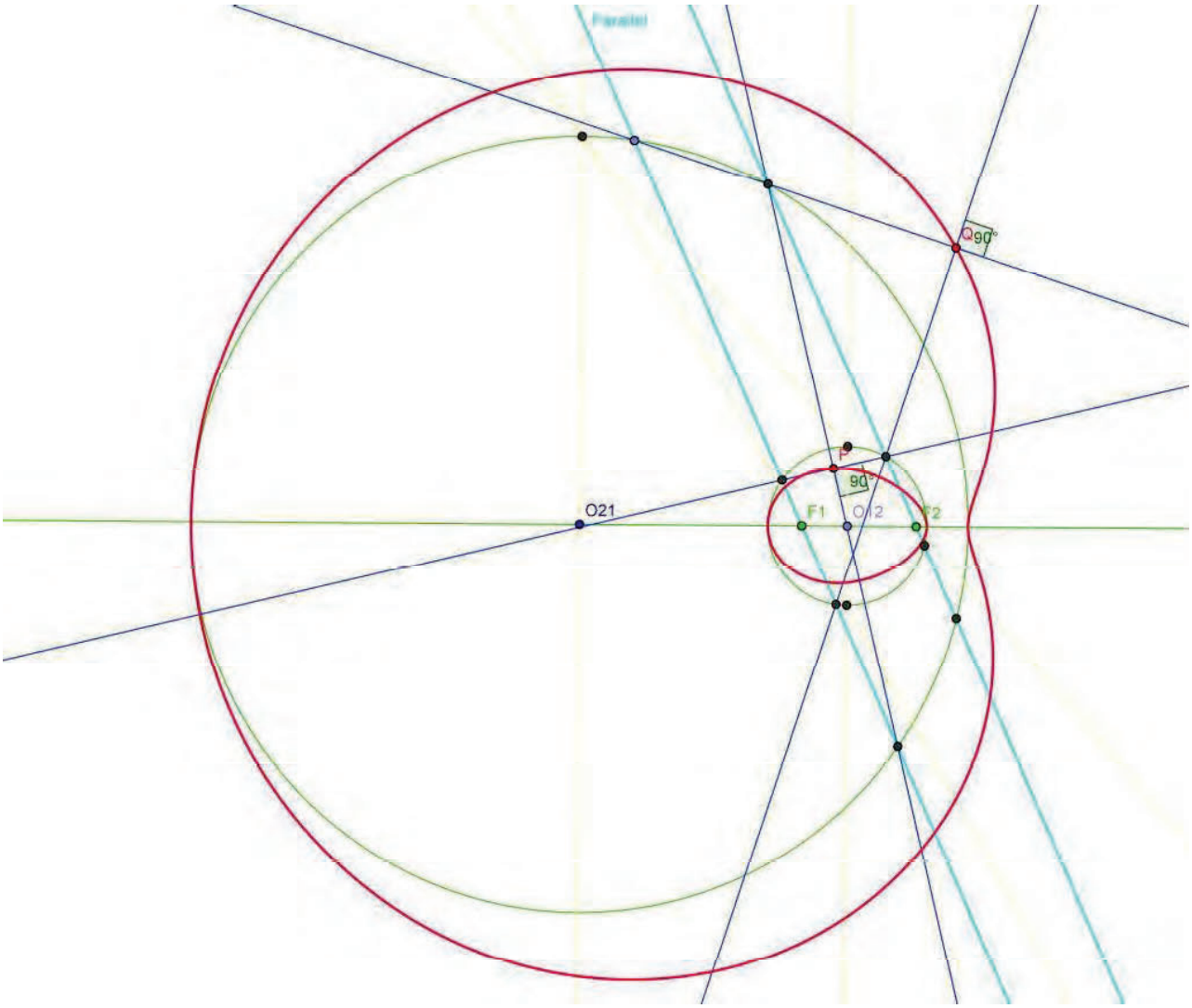
Doval の接線

証明　文献　:蛭子井博孝；”デカルトの卵形線の2，3の性質”
図学研究、12号、p.47-48、1973年

文献：蛭子井博孝；”デカルトの卵形線に関する考察-その幾何学的構図-”
図学研究、49号、p.13、1990年3月

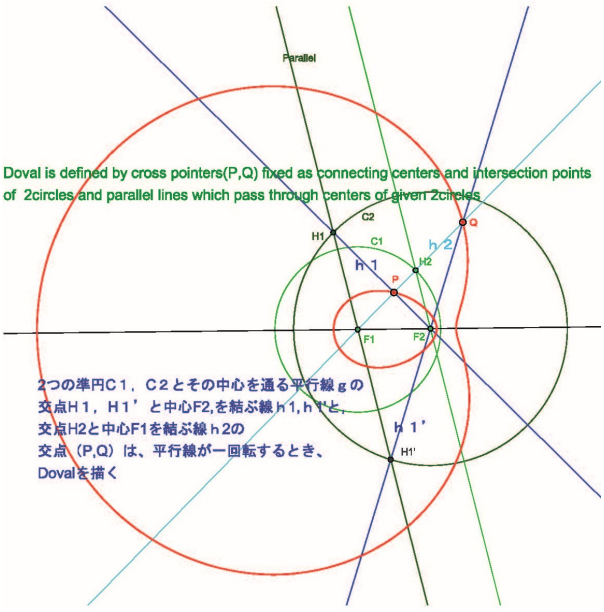
Doval (Inner Outer Parts 2) Defined by 2 Auxiliary circle(green)s

蛭子井博孝　岩国市元町4丁目12-10 - 縮尺（cm単位）: 1:1

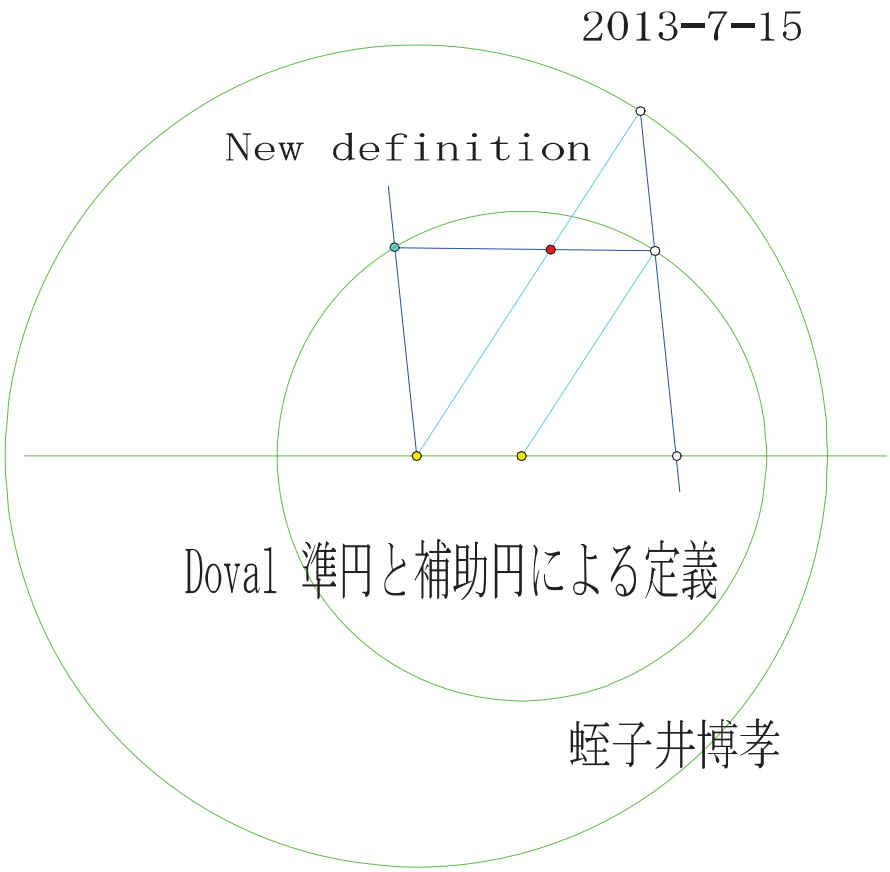


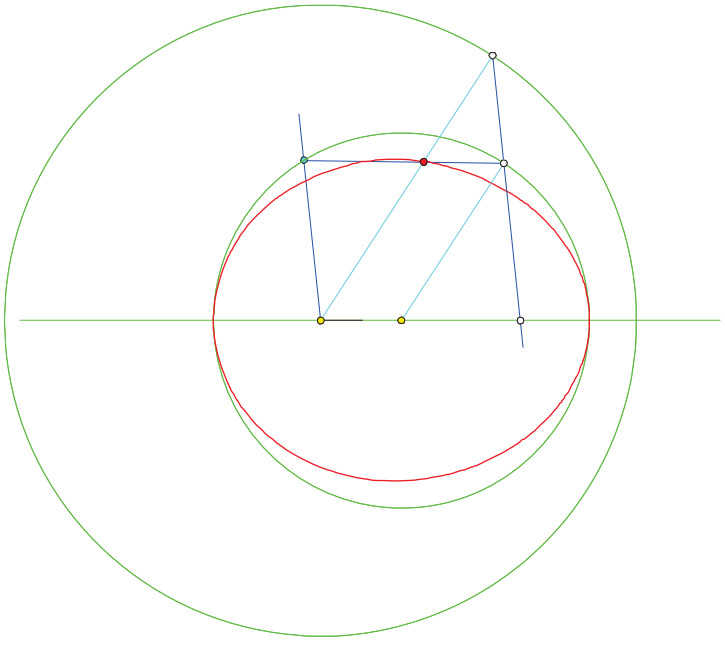
Doval DEF 2 with WORDS

蛭子井博孝　岩国市元町4丁目12-10 - 縮尺（cm単位）: 1:1



7　Ohval 準円と補助円による定義





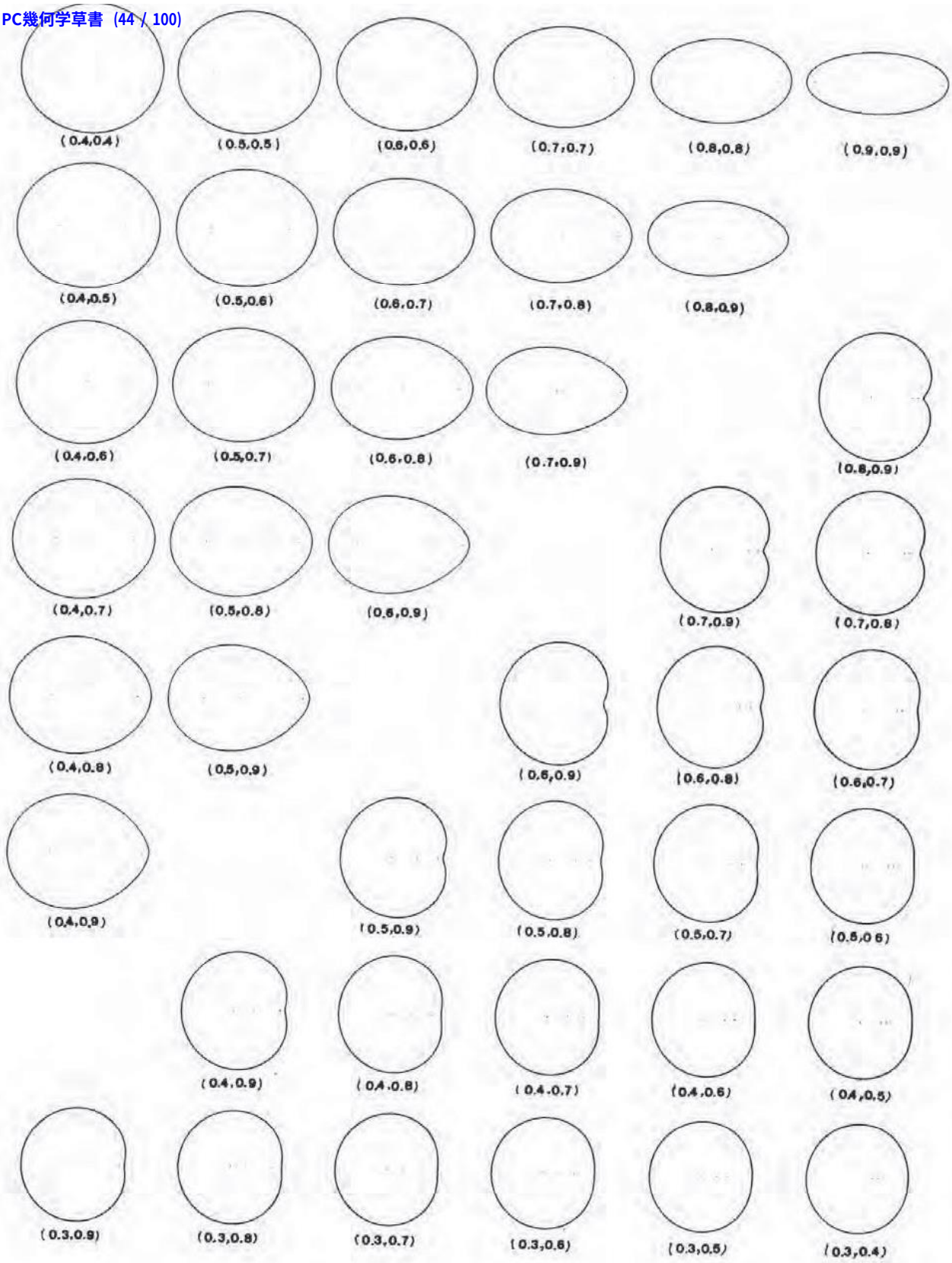
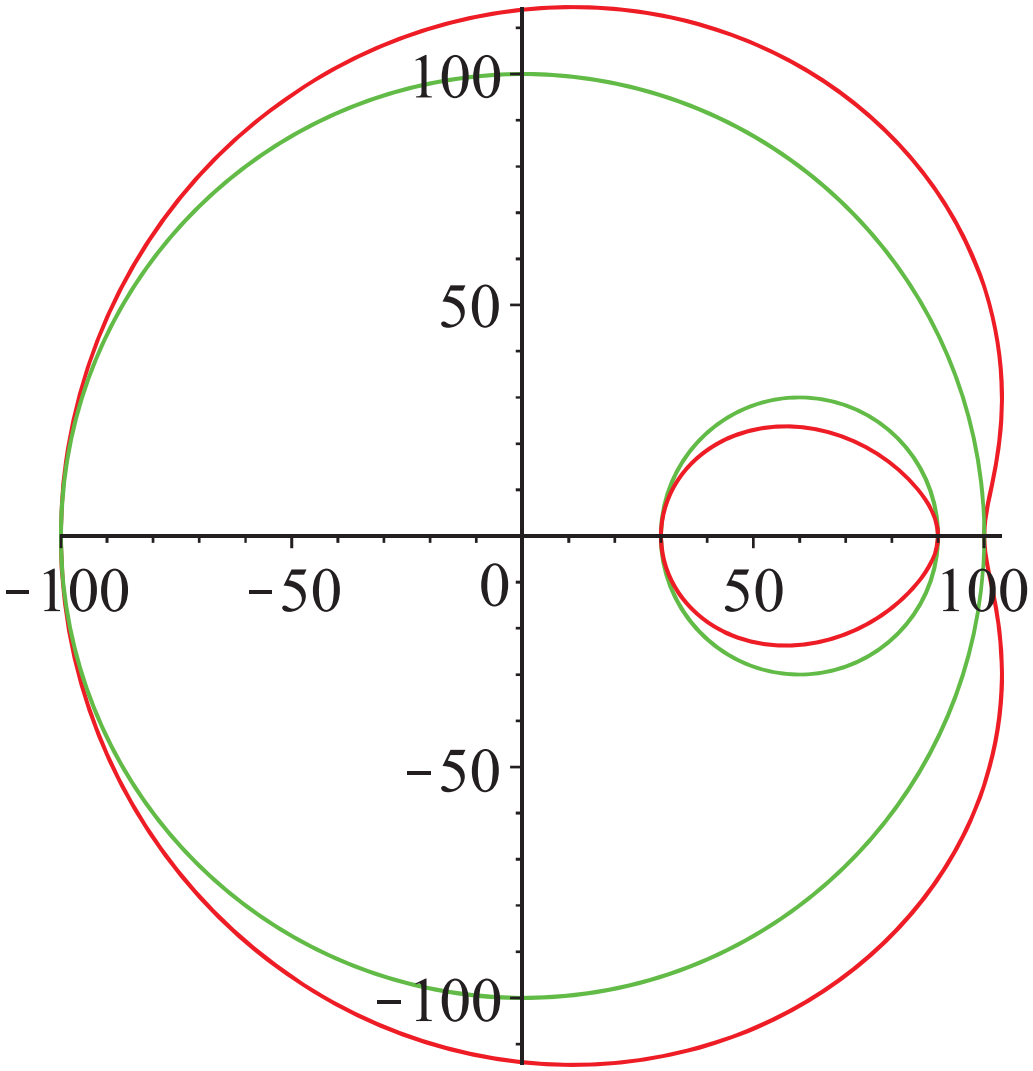


図1　卵形線の形状変化　上：内分枝，下：外分枝

上図は、対称軸長を、1に規格化して描いた。



$$\left[K=10,\ M=\frac{60}{7},\ N=\frac{60}{13},\ C=\frac{3600}{91}\right]$$

外補助円の半径 = 100, *内補助円の直径* = 60, *補助円の中心間距離* = 60

F1 = [46.2, 0], *F2* = [85.7, 0], *F3* = [106., 0]

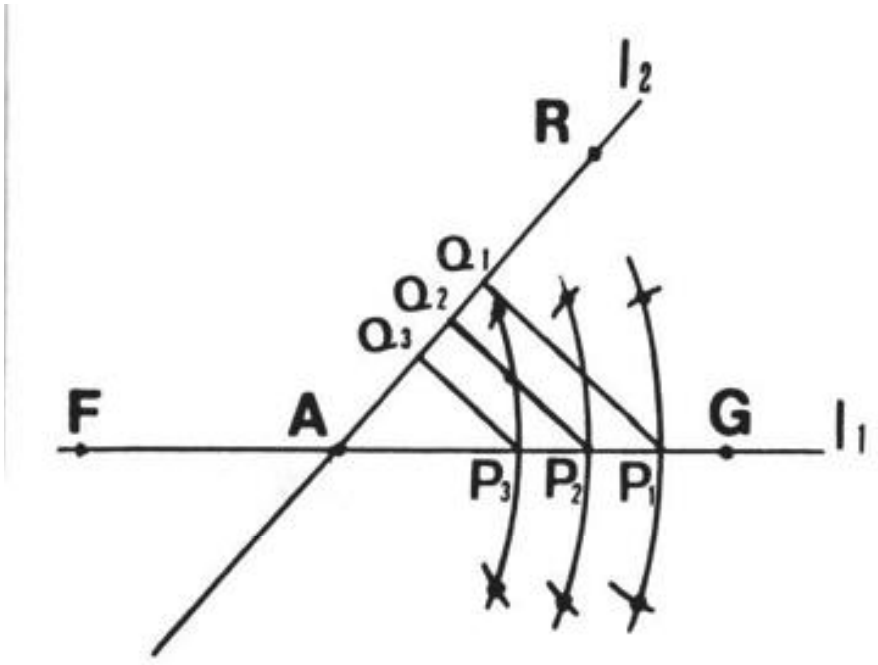
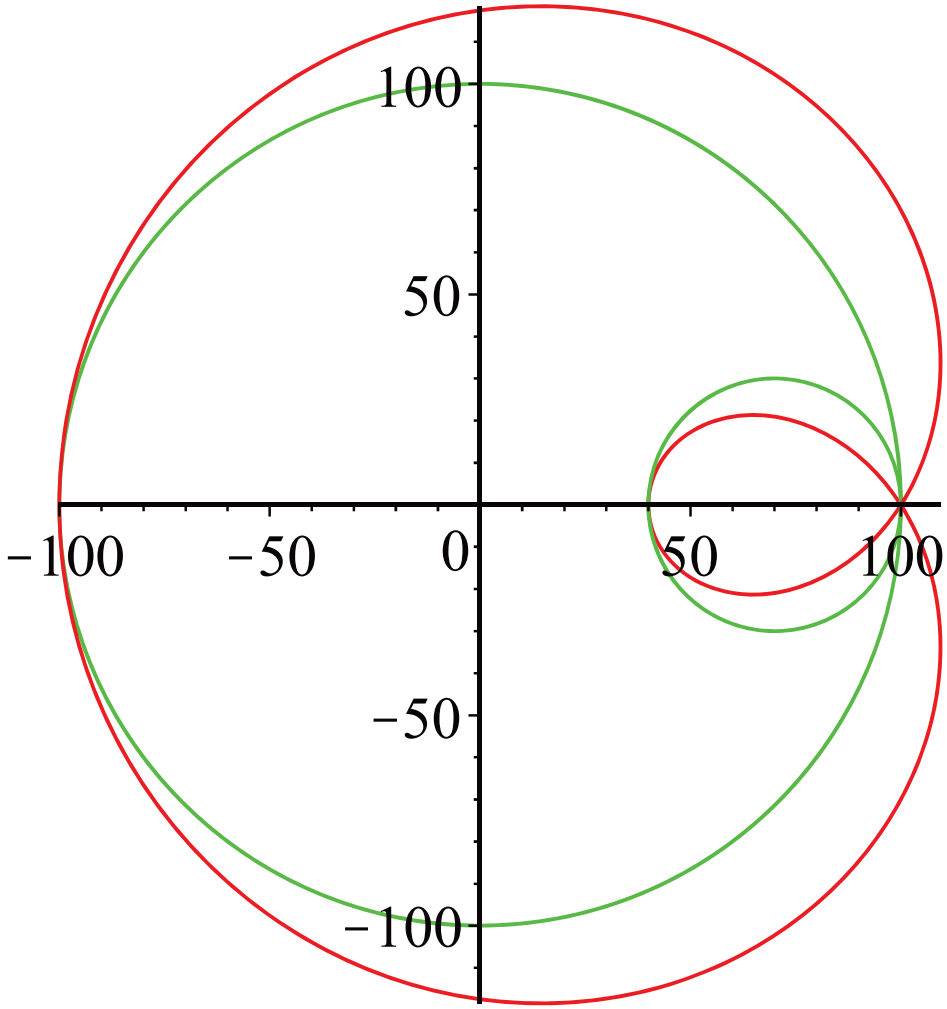


図4　デカルトによる卵形線の作図



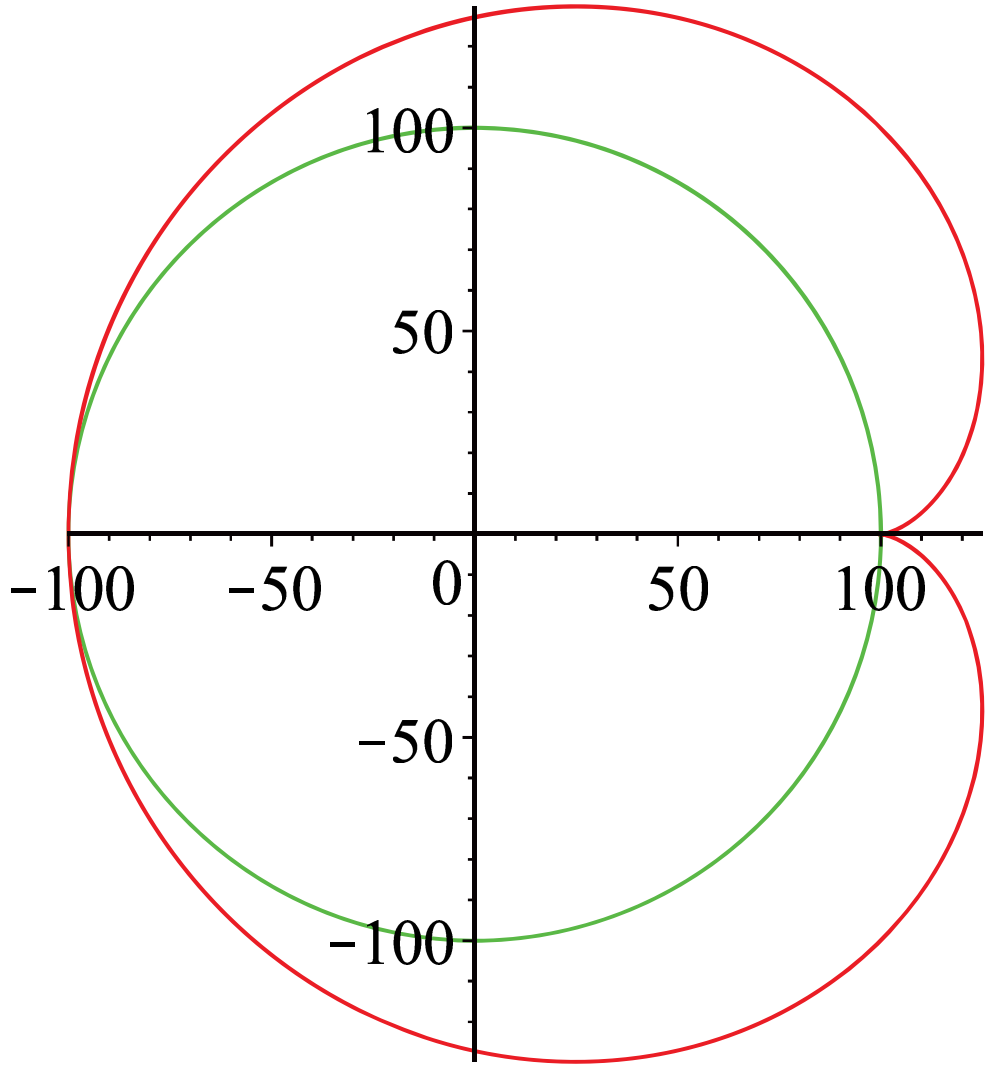
$$\left[K=10,\ M=10,\ N=\frac{70}{13},\ C=\frac{600}{13}\right]$$

外補助円の半径＝100, 内補助円の直径＝60, 補助円の中心間距離＝70

$F1=[53.8,\ 0]$, $F2=[100.,\ 0]$, $F3=[100.,\ 0]$

リマソン

```
> # 33....331=prime by H.E '20-12-26:
> for d from 1 to 7 by 6 do c := d :for h from 1 to 331 do c := 3·10^h + c :if isprime(c)
    then print(c[{h+1} 桁]=prime) fi :od:od:
                        31{2} 桁=prime
                        331{3} 桁=prime
                        3331{4} 桁=prime
                        33331{5} 桁=prime
                        333331{6} 桁=prime
                        3333331{7} 桁=prime
                        33333331{8} 桁=prime
                        33333333333333331{18} 桁=prime
          333333333333333333333333333333331{40} 桁=prime
     33333333333333333333333333333333333333331{50} 桁=prime
 3333333333333333333333333333333333333333333333331{60} 桁=prime
3333333333333333333333333333333333333333333333333333333333333333333333333333\
    3331{78} 桁=prime
3333333333333333333333333333333333333333333333333333333333333333333333333333\
    333333333333333333333331{101} 桁=prime
3333333333333333333333333333333333333333333333333333333333333333333333333333\
    3333333333333333333333333333333333333333333333333333333333333333333333333\
    333331{151} 桁=prime
3333333333333333333333333333333333333333333333333333333333333333333333333333\
    3333333333333333333333333333333333333333333333333333333333333333333333333\
    3333333333333333333333333333333333333333333333333333333333333333333333333\
    3333333333333333333333333333333333333333333333333333333333333333333333333\
    33333333333333333333333331{319} 桁=prime
```



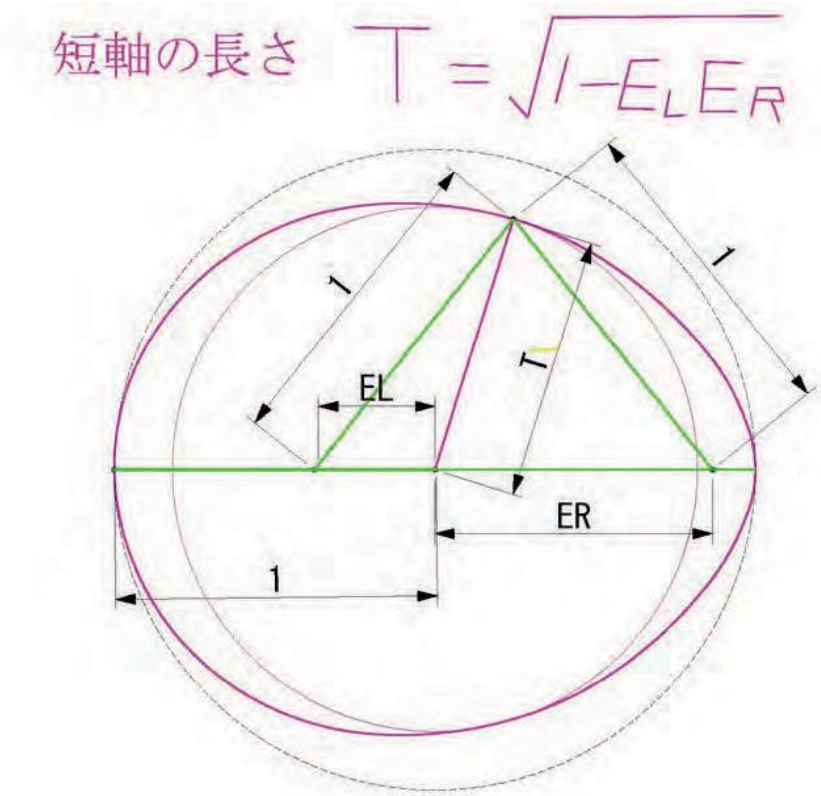
$$\left[K=10, M=10, N=\frac{9990}{1001}, C=\frac{200}{1001}\right]$$

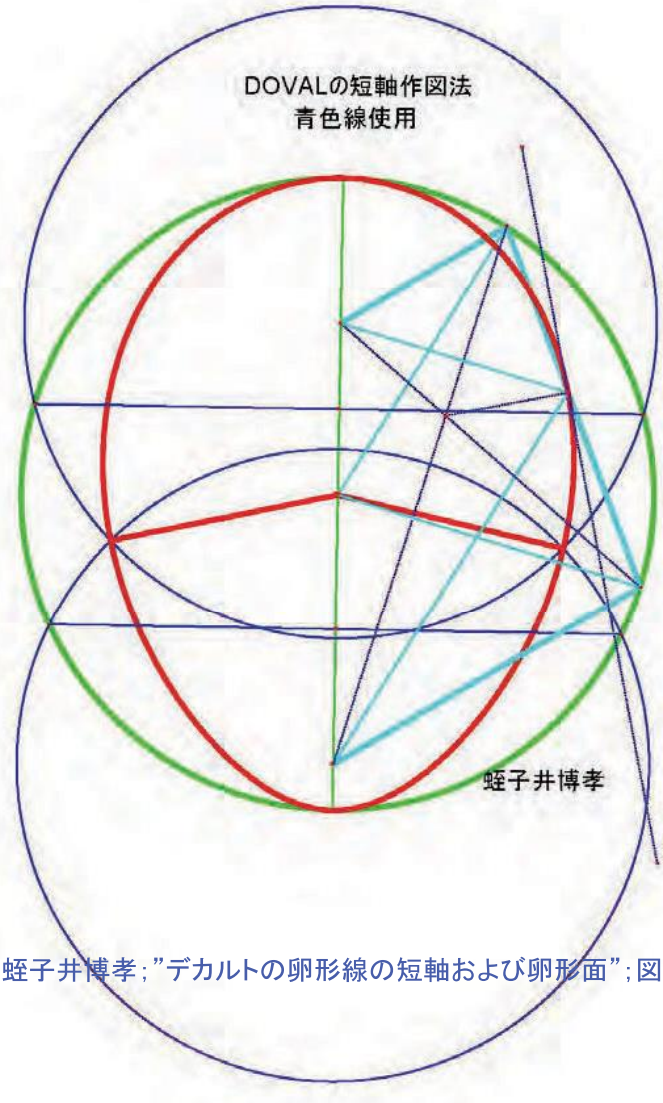
外補助円の半径$=100$, 内補助円の直径$=\frac{1}{5}$, 補助円の中心間距離$=\frac{999}{10}$

$F1=[99.8, 0], F2=[100., 0], F3=[100., 0]$

擬似カルジオイド (1)

```
> # 1^1 + 2^2 + 3^3 + 4^4 ...h^h = Prime by H.E '23    1    1 :
> with(StringTools) :
> c := 0 : s := 0 : for h from 1 to 10000 do s := s + h^h :if isprime(s) then c := c + 1 :
      print(HHP(c) = [h, s], FormatTime("%Y-%m-%d-(%r)") ) fi: od:
                          HHP(1) = [2, 5], "2023-01-01-(06:49:03 PM)"
                         HHP(2) = [5, 3413], "2023-01-01-(06:49:03 PM)"
                        HHP(3) = [6, 50069], "2023-01-01-(06:49:03 PM)"
                   HHP(4) = [10, 10405071317], "2023-01-01-(06:49:03 PM)"
HHP(5) = [30, 208492413443704093346554910065262730566475781],                    (1)
    "2023-01-01-(06:49:03 PM)"
> h;
                                      5609                                       (2)
```





参考文献:蛭子井博孝;"デカルトの卵形線の短軸および卵形面";図学研究、68号1995年3月

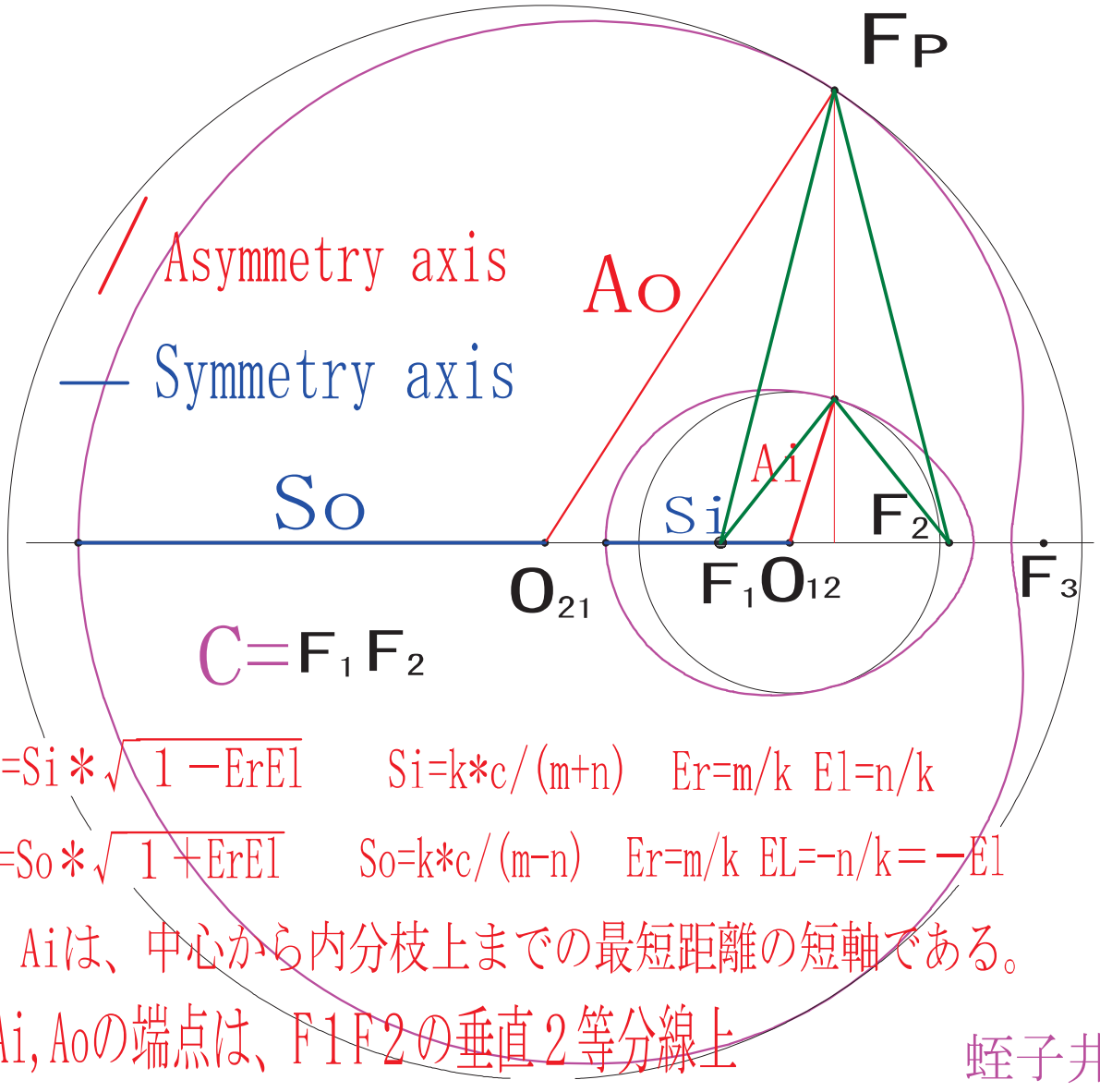
Dovalの対称非対称軸長の不変式

$$\left(\frac{Ao}{So}\right)^2+\left(\frac{Ai}{Si}\right)^2=2$$

Dovalの定義式

$$m\,r_1 \pm n\,r_2 = k\,c$$

の 任意定数(k>m>n>0)の値によらない



Ai=Si＊$\sqrt{1-ErEl}$　　Si=k*c/(m+n)　Er=m/k　El=n/k

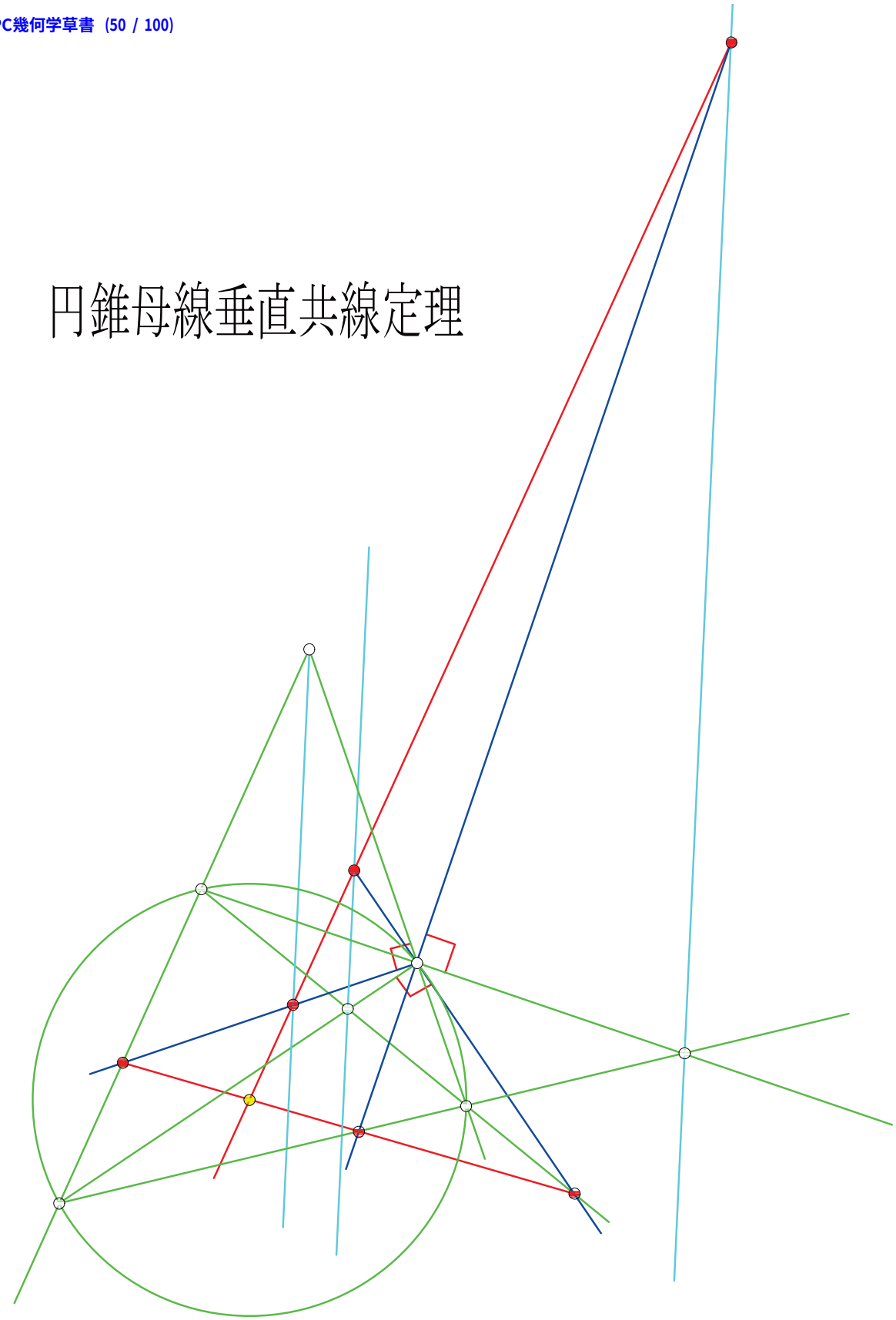
Ao=So＊$\sqrt{1+ErEl}$　　So=k*c/(m-n)　Er=m/k　EL=-n/k＝−El

Aiは、中心から内分枝上までの最短距離の短軸である。

Ai,Aoの端点は、F1F2の垂直2等分線上

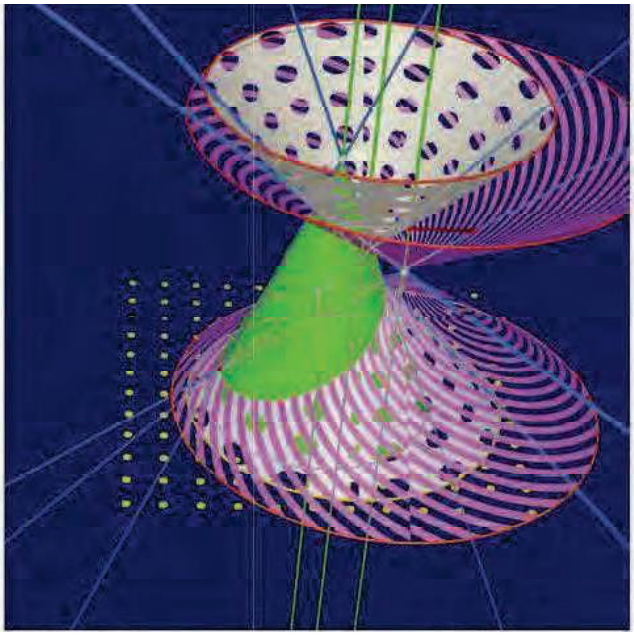
蛭子井博孝

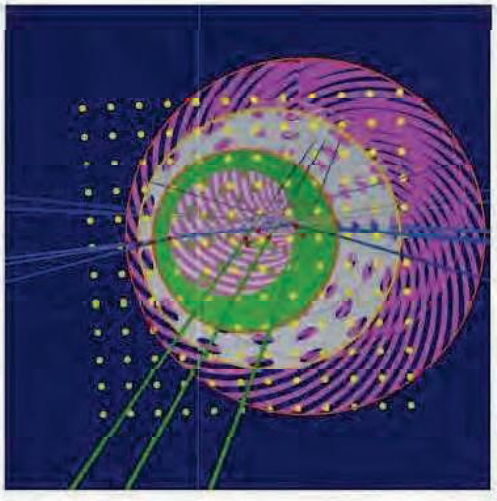
円錐母線垂直共線定理

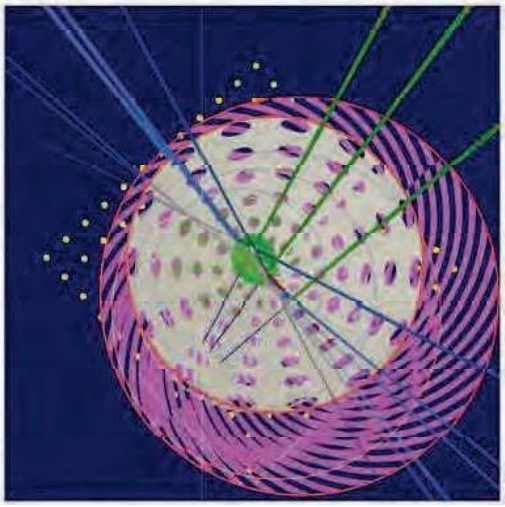


この定理の縦の共線の証明を、数セミ ノートに、1981年、蛙の子のペンネームで、パスカルの定理を用いて行ったものを投稿した。

3円錐面の3重一致空間曲線の軸方向への投影図画、Tajicoid3（旧名DOVAL曲線）であることを表す見本図3図







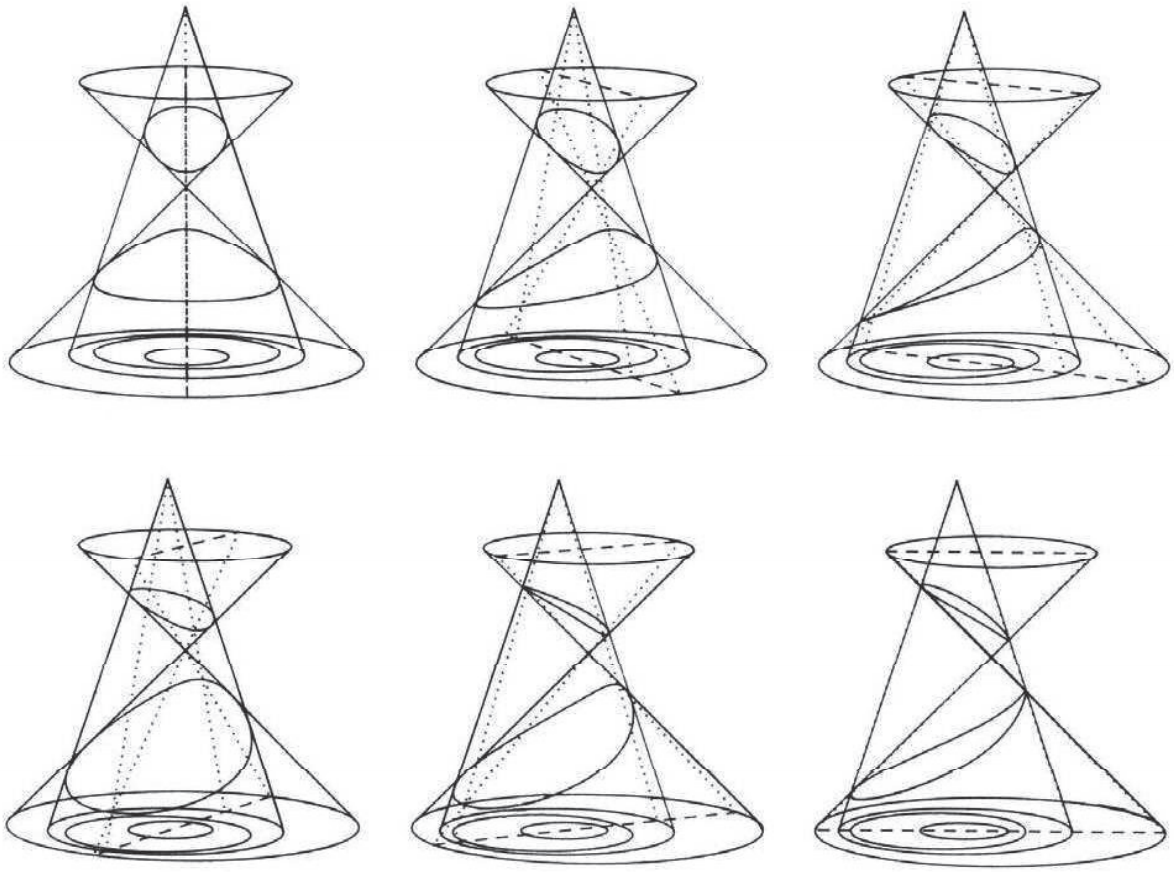


図3　円錐面の交線としての卵形線

付記　二円錐面の相貫曲線のパラメトリック表示

$$(x+c)^2+y^2=(z-kc)^2/m^2$$

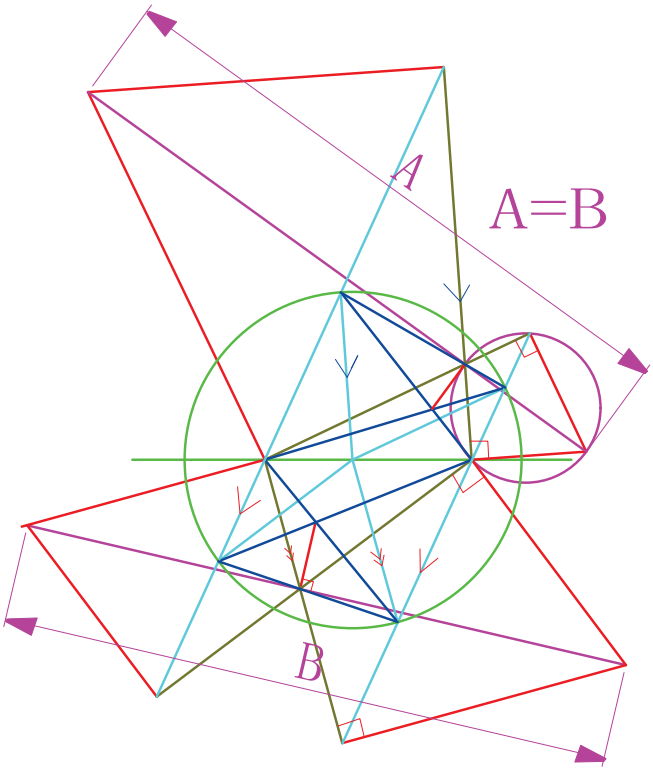
$$x^2+y^2=z^2/n^2$$

この2式の交線は

$$\begin{cases} x=\dfrac{1}{2c}\left\{\dfrac{(nt-kc)^2}{m^2}-t^2-c^2\right\} \\ y=\pm\sqrt{t^2-\dfrac{1}{4c^2}\left\{\dfrac{(nt-kc)^2}{m^2}-t^2-c^2\right\}^2} \\ z=nt \end{cases}$$

上式を因数分解して正になるtの範囲を求めて使う

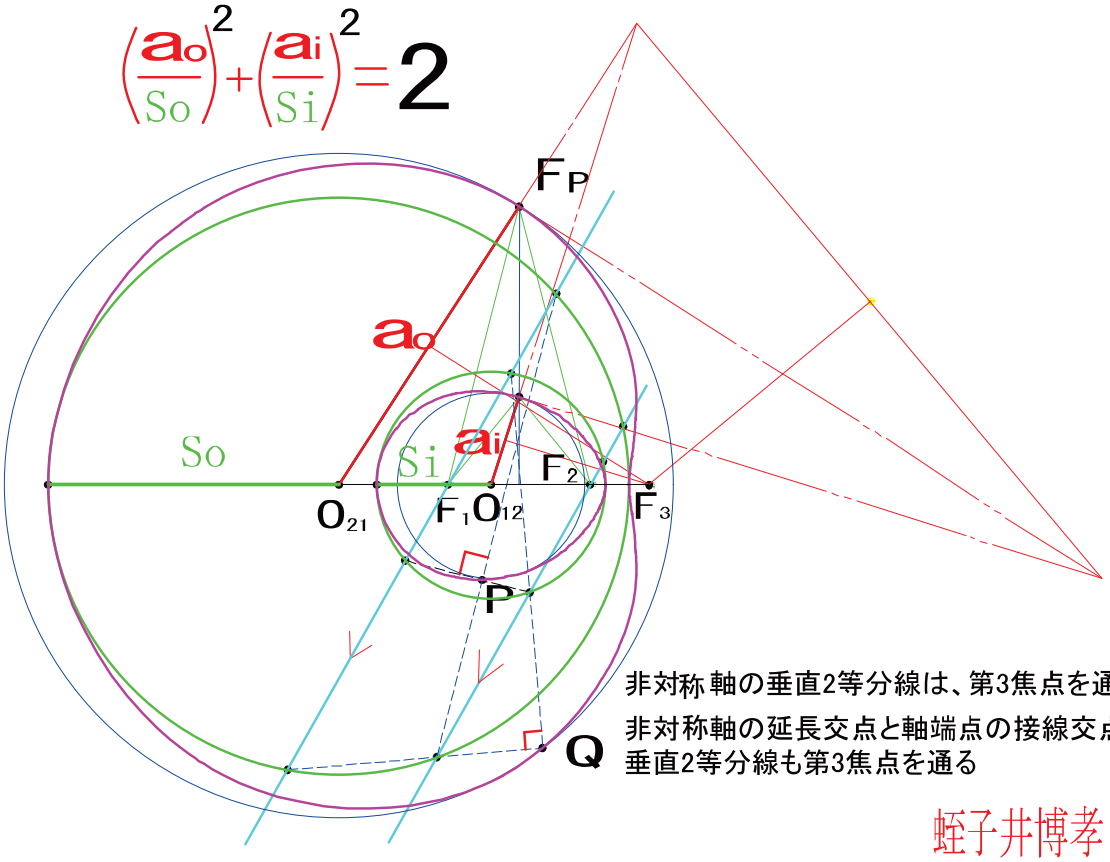
Doval ２題



Doval不変式

2015−5−5

$$\left(\frac{a_o}{So}\right)^2+\left(\frac{a_i}{Si}\right)^2=2$$



非対称軸の垂直2等分線は、第3焦点を通る

非対称軸の延長交点と軸端点の接線交点の垂直2等分線も第3焦点を通る

蛭子井博孝

1． Introduction

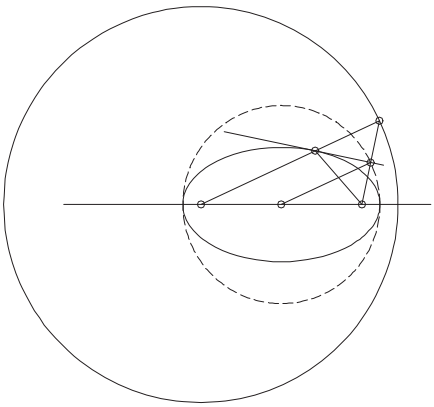


Fig.1. Composition of Tangent on Ellipse

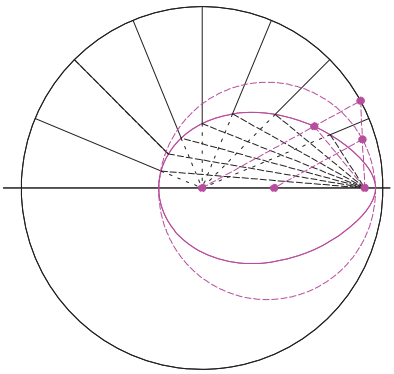


Fig.2. Oval extended from Ellipse

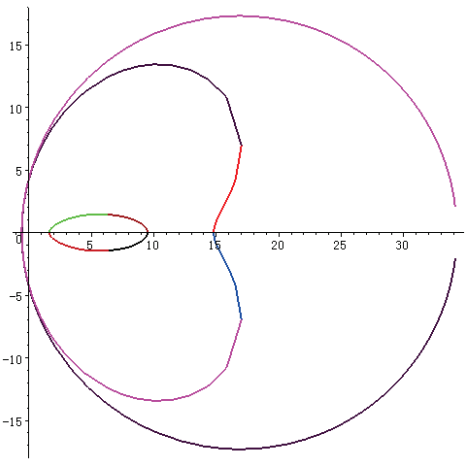


Fig.3.Chocoid extended from Doval

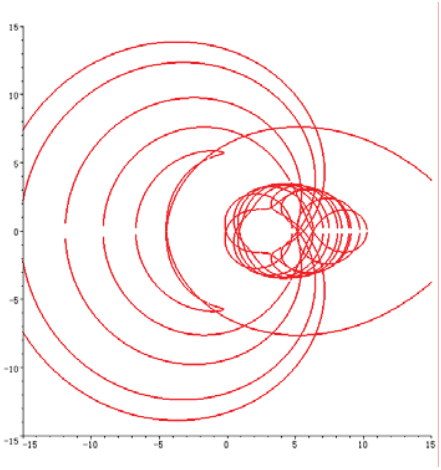


Fig.4. Tajicoid extended from the Oval

Tangent line is a perpendicular bisector in Fig.1

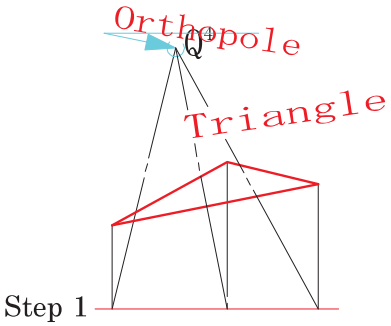
We extend bisector(1:1) to (n:m), then Oval is obtained.

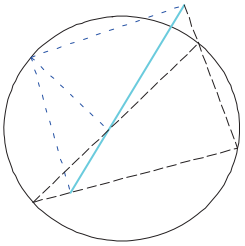
When ratio is (n:m), then DOVAL(theOval) is also defined by mR1±nR2=kc。

But Chocoid and Tajicoid have not yet a simple equation. It can be only defined by Maple Program which is made by Definition-Composition of Chocoid and Tajicoid respectively. by H.E

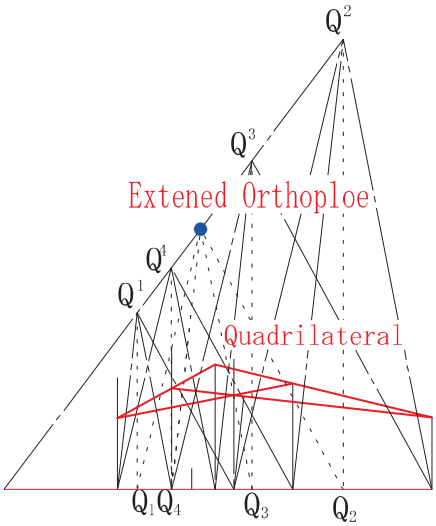
5． Infinity Chain Theorem

We use following theorem in order to define Chocoid and Tajicoid.

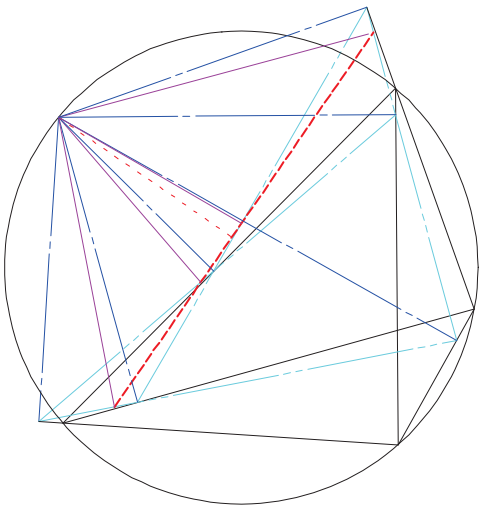




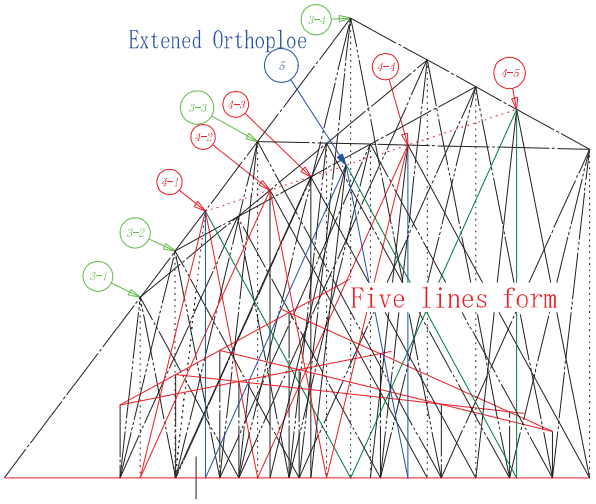
Simson Theorem (Step1(Chain3))



Step 2 (Chain 4)

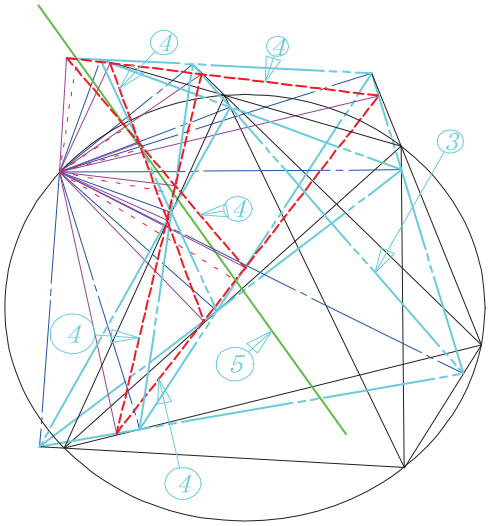


Step 2(Chain 4)



Step 3 (Chain 5)

Fig.9. Orthopole Chain



Step 3 (chain 5)

Fig.10. Simson Chain by H.E

6． Relation of Extended Curves Chocoid and Tajicoid

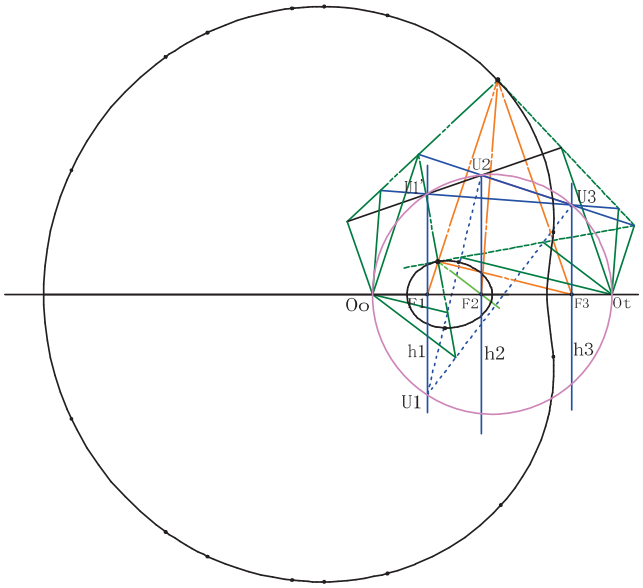


Fig.10.

In this fugure. Orthopole and Simson cross-point are on same position.

(1) Extension of Doval using extended Simson theorem-Composition。

Tajicoid is defined using This figures.

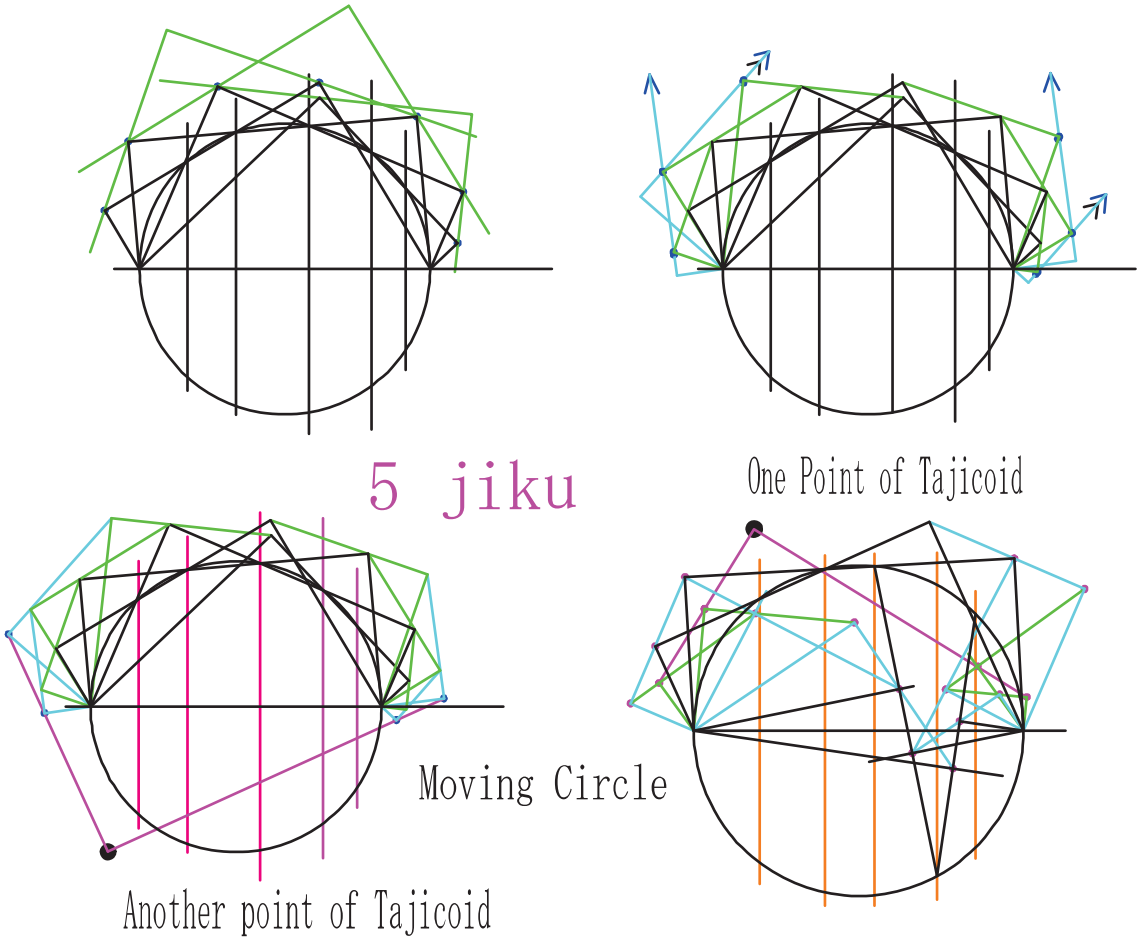
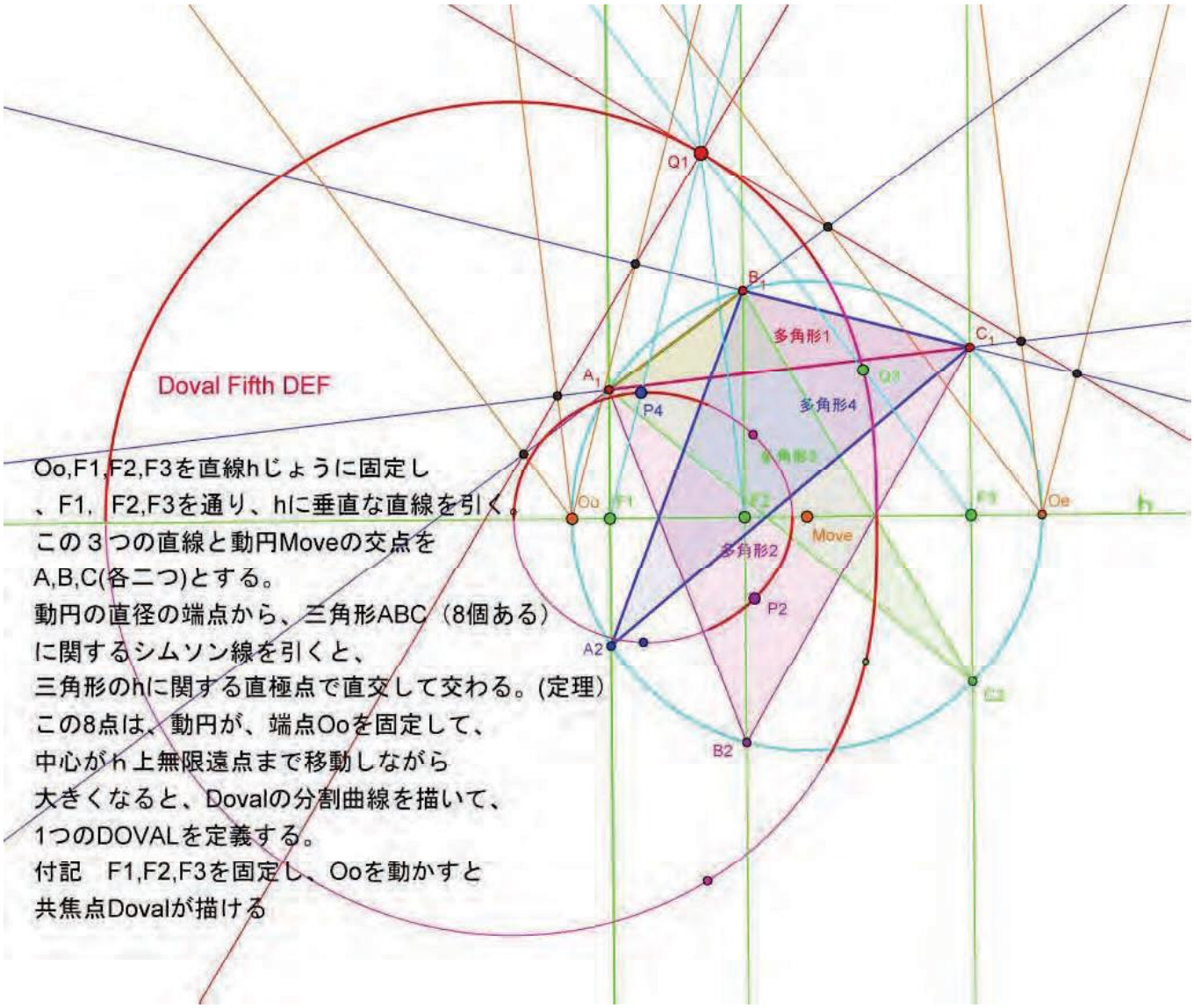


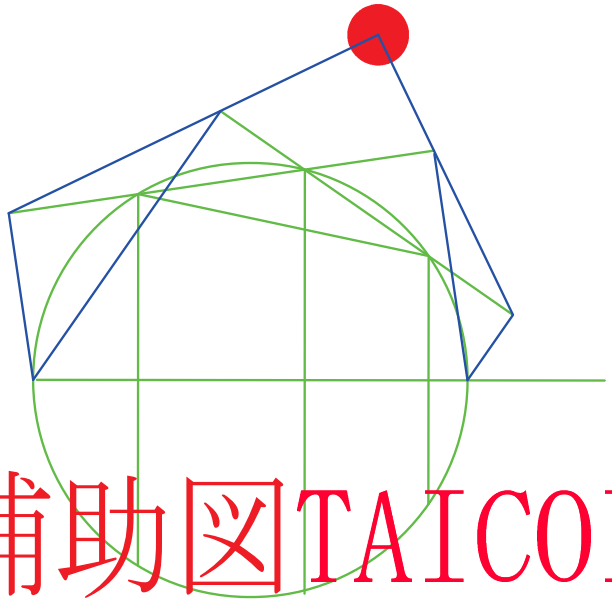
Fig.11. Def. Figure of Tajicoid b y H.E

DOVAL　第五定義

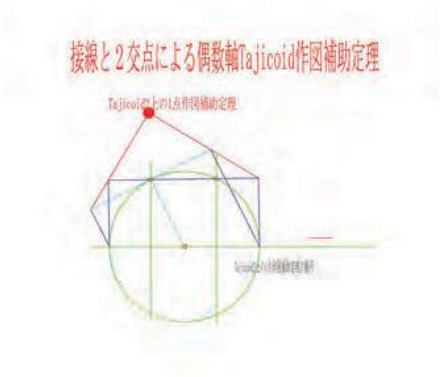
蛭子井博孝　740-0012　岩国市元町4丁目12-10　0827-22-3305 - 縮尺（cm単位）: 1:1

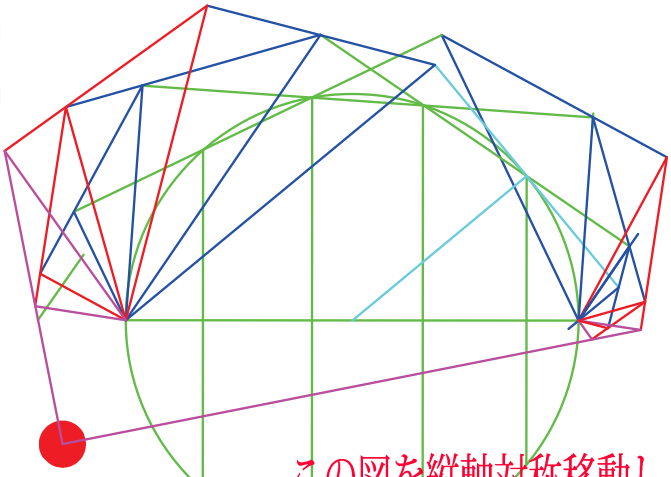


TAJICOID 3



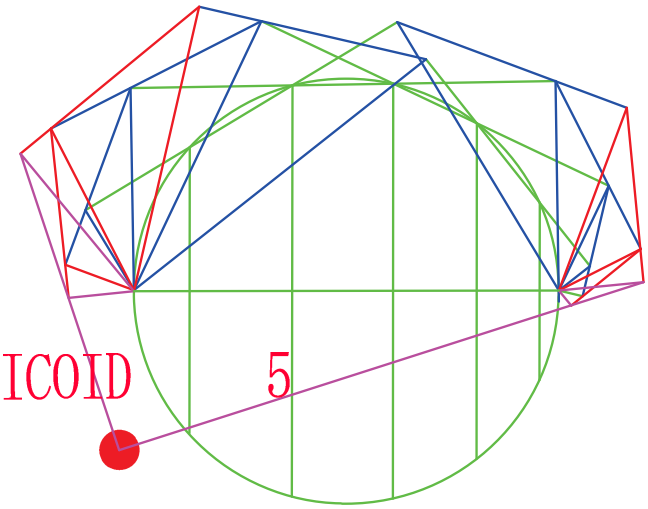
定義補助図TAICOID





TAJICOID 4

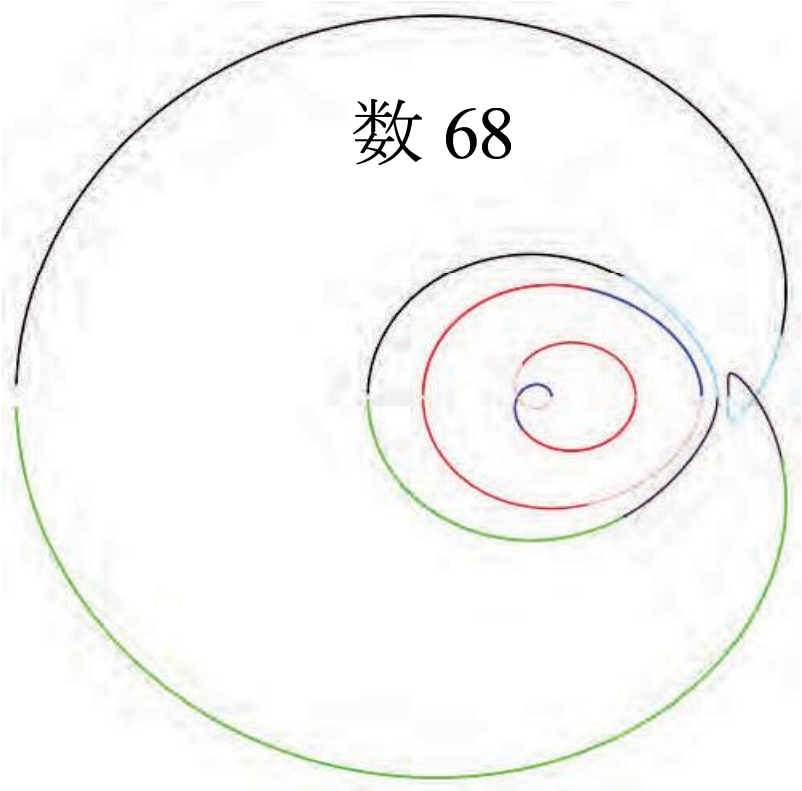
この図を縦軸対称移動し、右交点に、接線折線を引くことに再定義する。



TAICOID 5

100 までの数を Tajicoid 表現

日本図学会名誉会員　蛭子井博孝制作

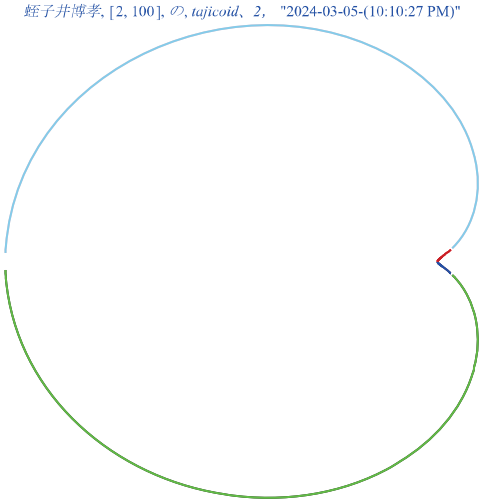


Tajicoid, 4, No(10), `数`(68), `焦点 X 座標`, 7, 10, 21, 68, `蛭子井博孝`
,　　"2024-02-16-(01:40:37 AM)"

```
> print( ) : print(蛭子井博孝, [2, 100], の, tajicoid、 2,  FormatTime("%Y-%m-%d-(%r)") ) :
for jj from 1 to LC[1] do for ii from 1 to 2 do a[ii] := (Hs||1||jj)[ii] :od : j := 0 : for i1
from −1 to 1 by 2 do for i2 from −1 to 1 by 2 do  for i3 from −1 to 1 by 2 do  j := j
+ 1 : XD := subs(XS = t, x2 = a[1, y2 = i1·sqrt((a||1)·t − (a||1)^2), x3 = a[2, y3 = i2
·sqrt((a||2)·t − (a||2)^2), x1 = a[1 + i1·sqrt((a||1)·t − (a||1)^2), y1 = i1·sqrt((a||1)
·t − (a||1)^2) + t/2 − a[1, XK) : YD := subs(XS = t, x2 = a[1, y2 = i1·sqrt((a||1)·t
− (a||1)^2), x3 = a[2, y3 = i2·sqrt((a||2)·t − (a||2)^2), x1 = a[1 + i1·sqrt((a||1)·t
− (a||1)^2), y1 = i1·sqrt((a||1)·t − (a||1)^2) + t/2 − a[1, YK) : T[j := plot([XD,
YD, t = a||2 .. ∞], axes = none, color = CP[j]) : od;od;od; print(display({seq(T||j, j = 1
..8)})) : print((a||2)[Tajicoid, (1 + 1)[焦点X座標, (seq(a||i, i = 1..2))]] = No(jj)],
蛭子井博孝, FormatTime("%Y-%m-%d-(%r)")) : print( ) :od:
```

?

蛭子井博孝, [2, 100], の, tajicoid、 2, "2024-03-05-(10:10:27 PM)"



$6_{Tajicoid,\,2_{焦点X座標,\,5,\,6}=No(1)}$, 蛭子井博孝, "2024-03-05-(10:10:28 PM)"

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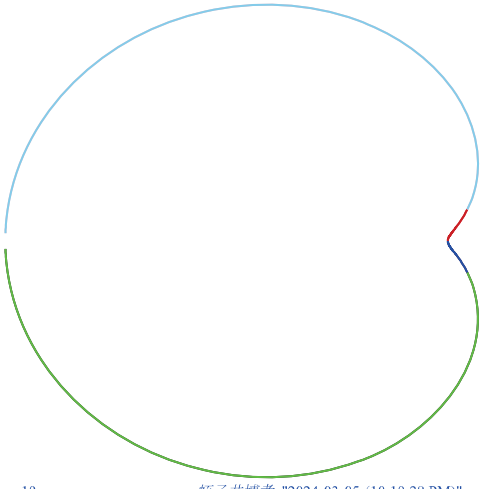

$10_{Tajicoid,\,2_{焦点X座標,\,7,\,10}=No(2)}$, 蛭子井博孝, "2024-03-05-(10:10:28 PM)"

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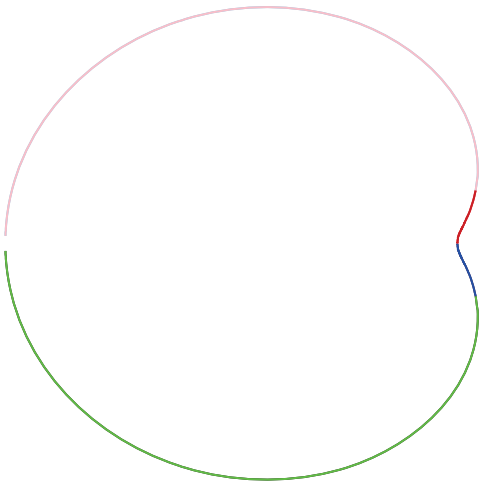

$12_{Tajicoid,\,2_{焦点X座標,\,7,\,12}=No(3)}$, 蛭子井博孝, "2024-03-05-(10:10:28 PM)"

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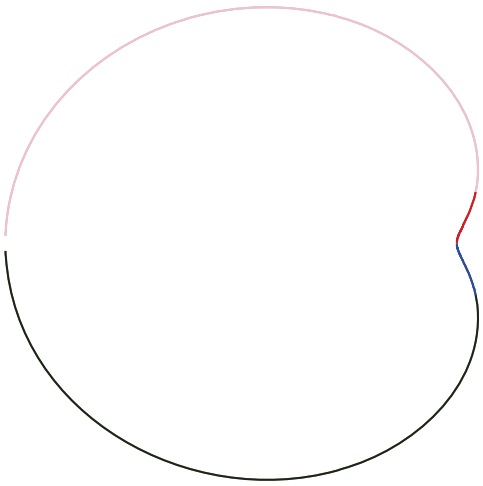

$22_{Tajicoid,\,2_{焦点X座標,\,13,\,22}=No(4)}$, 蛭子井博孝, "2024-03-05-(10:10:28 PM)"

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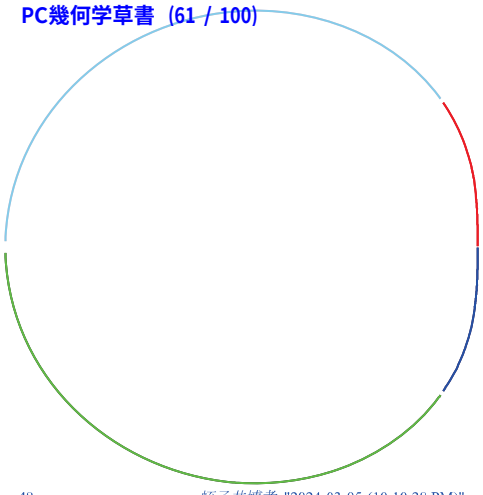

48$_{Tajicoid,\,2_{焦点X座標,\,11,\,48}=No(9)}$, *蛭子井博孝*, "2024-03-05-(10:10:28 PM)"

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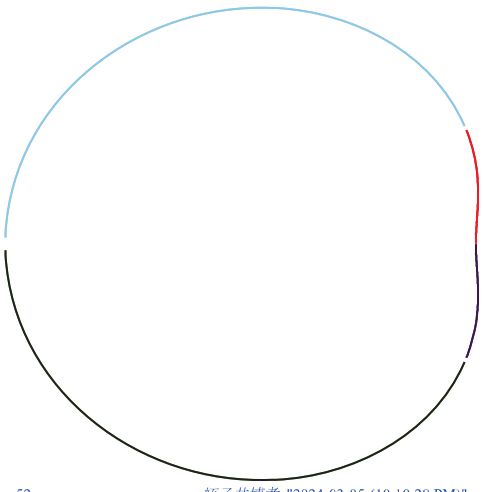

52$_{Tajicoid,\,2_{焦点X座標,\,17,\,52}=No(10)}$, *蛭子井博孝*, "2024-03-05-(10:10:28 PM)"

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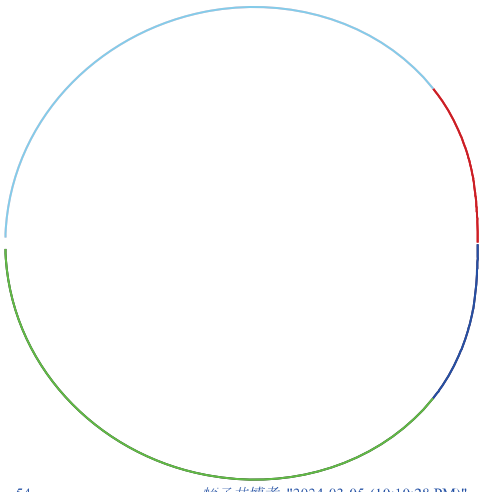

54$_{Tajicoid,\,2_{焦点X座標,\,11,\,54}=No(11)}$, *蛭子井博孝*, "2024-03-05-(10:10:28 PM)"

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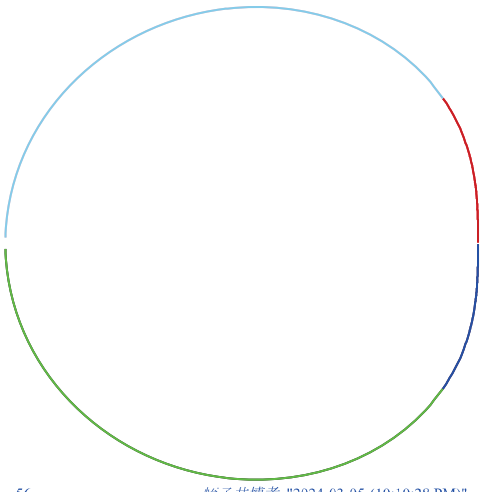

56$_{Tajicoid,\,2_{焦点X座標,\,13,\,56}=No(12)}$, *蛭子井博孝*, "2024-03-05-(10:10:28 PM)"

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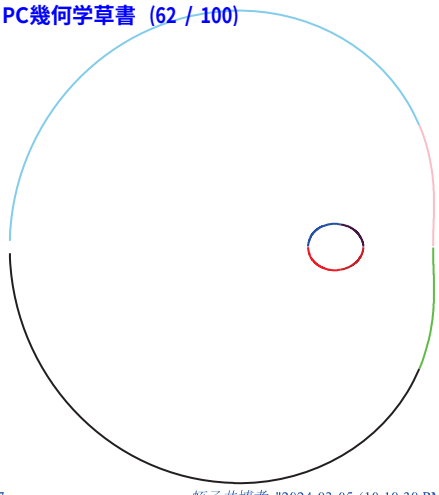

$57_{Tajicoid,\,3_{焦点X座標,\,13,\,22,\,57}=No(11)}$, *蛭子井博孝*, "2024-03-05-(10:10:30 PM)"

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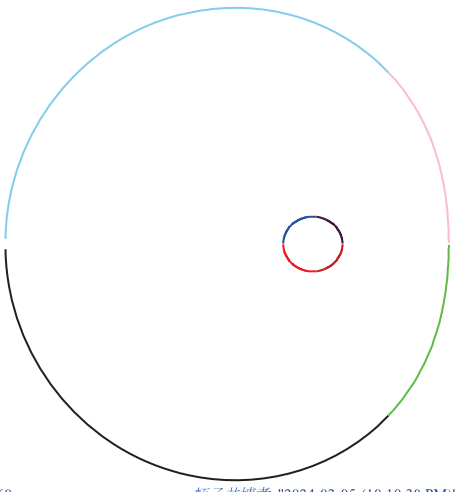

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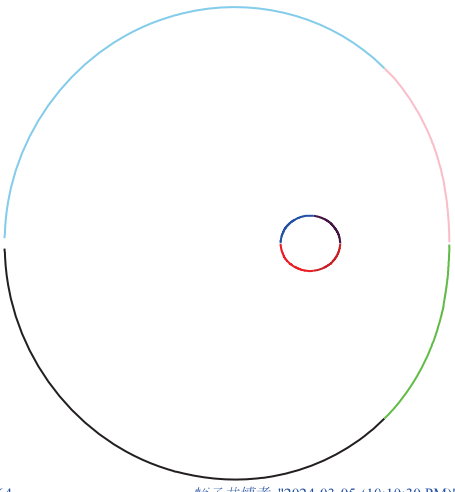

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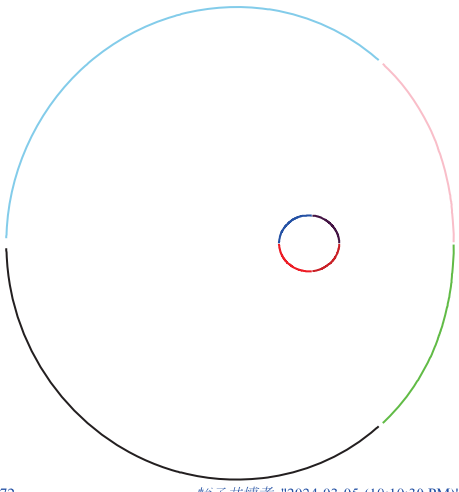

$72_{Tajicoid,\,3_{焦点X座標,\,7,\,12,\,72}=No(14)}$, *蛭子井博孝*, "2024-03-05-(10:10:30 PM)"

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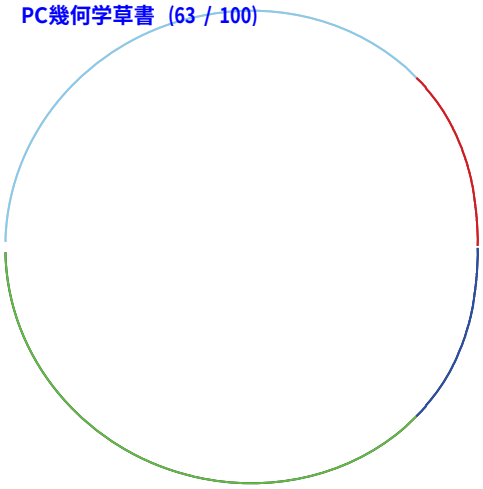
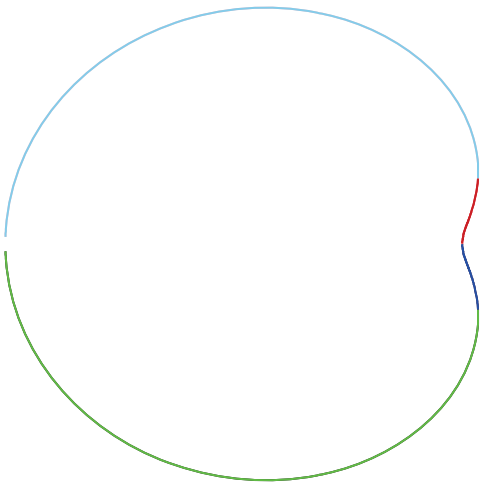


$80_{Tajicoid,\ 2_{焦点X座標,\ 13,\ 80}} = No(17)$, *蛭子井博孝*, "2024-03-05-(10:10:29 PM)"

?



$82_{Tajicoid,\ 2_{焦点X座標,\ 43,\ 82}} = No(18)$, *蛭子井博孝*, "2024-03-05-(10:10:29 PM)"

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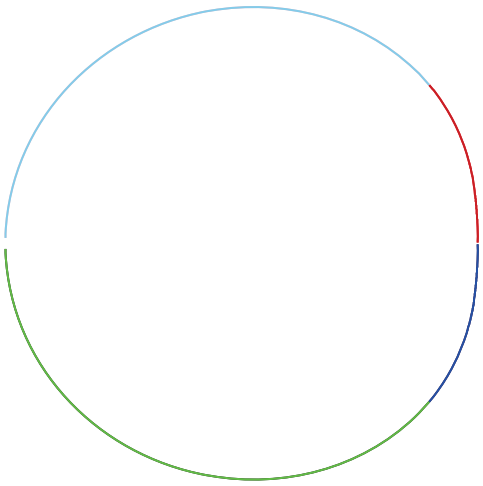
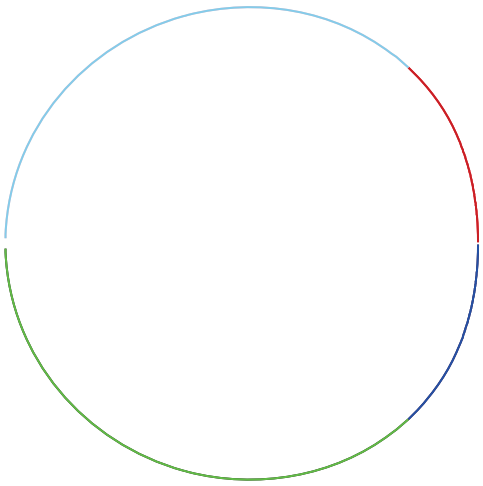


$88_{Tajicoid,\ 2_{焦点X座標,\ 17,\ 88}} = No(19)$, *蛭子井博孝*, "2024-03-05-(10:10:29 PM)"

?



$90_{Tajicoid,\ 2_{焦点X座標,\ 13,\ 90}} = No(20)$, *蛭子井博孝*, "2024-03-05-(10:10:29 PM)"

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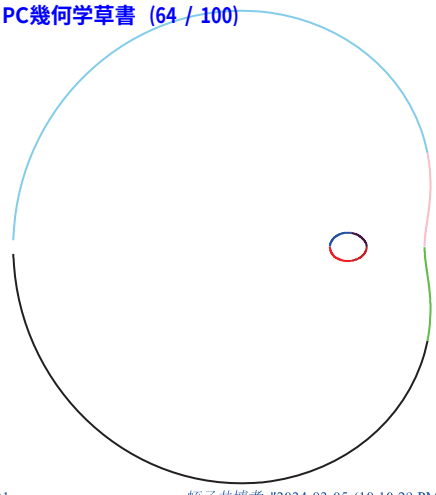
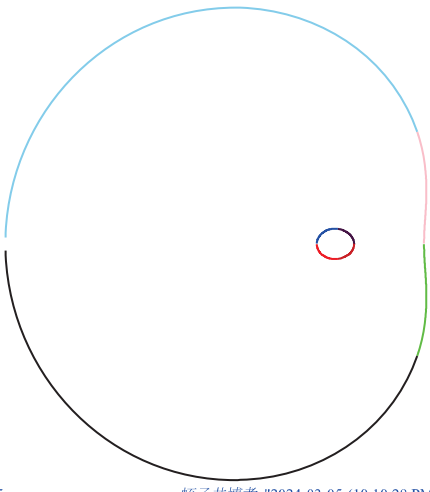


$21_{Tajicoid,\,3_{焦点X座標,\,7,\,10,\,21}=No(3)}$, 蛭子井博孝, "2024-03-05-(10:10:29 PM)"

?



$25_{Tajicoid,\,3_{焦点X座標,\,7,\,10,\,25}=No(4)}$, 蛭子井博孝, "2024-03-05-(10:10:29 PM)"

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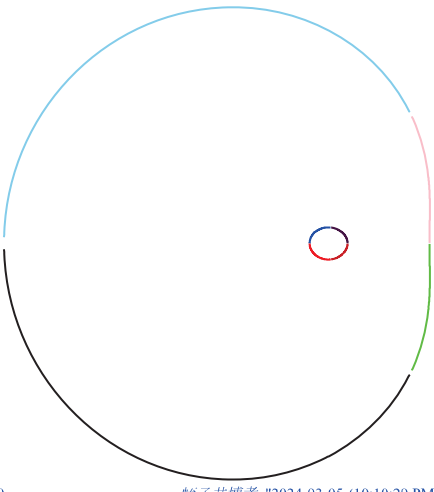
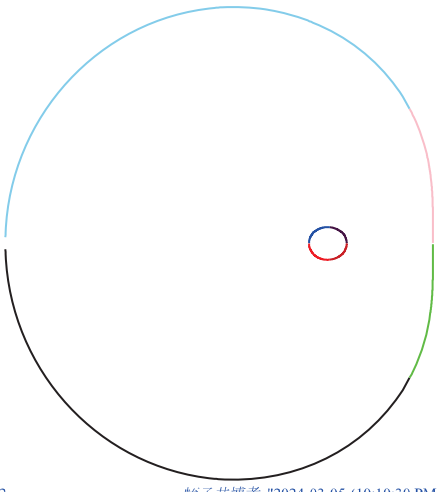


$30_{Tajicoid,\,3_{焦点X座標,\,7,\,10,\,30}=No(5)}$, 蛭子井博孝, "2024-03-05-(10:10:29 PM)"

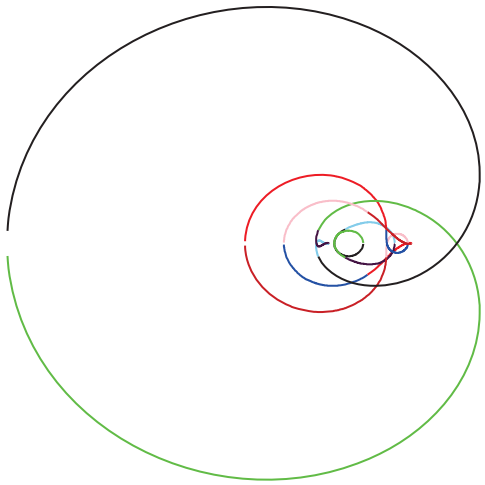
?



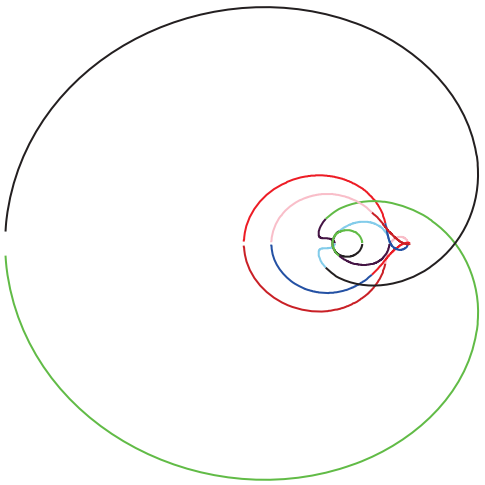
$32_{Tajicoid,\,3_{焦点X座標,\,7,\,10,\,32}=No(6)}$, 蛭子井博孝, "2024-03-05-(10:10:30 PM)"

?

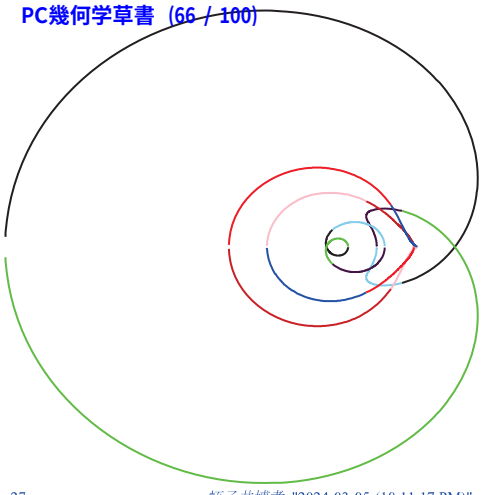
```
> qy12:=subs(X1=qx12,Y1=qy12,X2=qx23,Y2=qy23,XP):
> qx23:=subs(X1=x2,Y1=y2,X2=x3,Y2=y3,XP):
> qy23:=subs(X1=x2,Y1=y2,X2=x3,Y2=y3,YP):
> qx34:=subs(X1=x3,Y1=y3,X2=x4,Y2=y4,XP):
> qy34:=subs(X1=x3,Y1=y3,X2=x4,Y2=y4,YP):
> qx45:=subs(X1=x4,Y1=y4,X2=x5,Y2=y5,XP):
> qy45:=subs(X1=x4,Y1=y4,X2=x5,Y2=y5,YP):

> rx12:=subs(X1=qx12,Y1=qy12,X2=qx23,Y2=qy23,XP):
> ry12:=subs(X1=qx12,Y1=qy12,X2=qx23,Y2=qy23,YP):
> rx23:=subs(X1=qx23,Y1=qy23,X2=qx34,Y2=qy34,XP):
> ry23:=subs(X1=qx23,Y1=qy23,X2=qx34,Y2=qy34,YP):
> rx34:=subs(X1=qx34,Y1=qy34,X2=qx45,Y2=qy45,XP):
> ry34:=subs(X1=qx34,Y1=qy34,X2=qx45,Y2=qy45,YP):

> sx12:=subs(X1=rx12,Y1=ry12,X2=rx23,Y2=ry23,XP):
> sy12:=subs(X1=rx12,Y1=ry12,X2=rx23,Y2=ry23,YP):
> sx23:=subs(X1=rx23,Y1=ry23,X2=rx34,Y2=ry34,XP):
> sy23:=subs(X1=rx23,Y1=ry23,X2=rx34,Y2=ry34,YP):

> # (X1,Y1) to (X2,Y2) wo tooru Line he (XS,0) yori kudasita suisen no asi (XP,YP):
> #shuusei:
> s:=(-X1*X2+X1^2+Y1^2-Y1*Y2+XS*(X2-X1))/((X1-X2)^2+(Y1-Y2)^2):

> XP:=s*(X2-X1)+X1:
> YP:=s*(Y2-Y1)+Y1:

> qx21:=subs(X1=x1,Y1=y1,X2=x2,Y2=y2,XP):
> qy21:=subs(X1=x1,Y1=y1,X2=x2,Y2=y2,YP):
> qx32:=subs(X1=x2,Y1=y2,X2=x3,Y2=y3,XP):
> qy32:=subs(X1=x2,Y1=y2,X2=x3,Y2=y3,YP):
> qx43:=subs(X1=x3,Y1=y3,X2=x4,Y2=y4,XP):
> qy43:=subs(X1=x3,Y1=y3,X2=x4,Y2=y4,YP):
> qx54:=subs(X1=x4,Y1=y4,X2=x5,Y2=y5,XP):
> qy54:=subs(X1=x4,Y1=y4,X2=x5,Y2=y5,YP):

> rx21:=subs(X1=qx21,Y1=qy21,X2=qx32,Y2=qy32,XP):
> ry21:=subs(X1=qx21,Y1=qy21,X2=qx32,Y2=qy32,YP):
> rx32:=subs(X1=qx32,Y1=qy32,X2=qx43,Y2=qy43,XP):
> ry32:=subs(X1=qx32,Y1=qy32,X2=qx43,Y2=qy43,YP):
> rx43:=subs(X1=qx43,Y1=qy43,X2=qx54,Y2=qy54,XP):
> ry43:=subs(X1=qx43,Y1=qy43,X2=qx54,Y2=qy54,YP):

> sx21:=subs(X1=rx21,Y1=ry21,X2=rx32,Y2=ry32,XP):
> sy21:=subs(X1=rx21,Y1=ry21,X2=rx32,Y2=ry32,YP):
> sx32:=subs(X1=rx32,Y1=ry32,X2=rx43,Y2=ry43,XP):

> sy32:=subs(X1=rx32,Y1=ry32,X2=rx43,Y2=ry43,YP):


> # (sx12,sy12)-(sx23,sy23)=line  kouten(XK,YK)  (sx21,sy21)-(sx32,sy32)=line:

> XK:=-((sx12*sy23-sy12*sx23)*(sx21-sx32)-(sx21*sy32-sx32*sy21)*(sx12-sx23))/((sx12-
  sy23)*(sx21-sx32)-(sy21-sy32)*(sx12-sx23)):
> YK:=((sy12-sy23)*(sx21*sy32-sx32*sy21)-(sy21-sy32)*(sx12*sy23-sx23*sy12))/((sy12-sy23)
  *(sx21-sx32)-(sy21-sy32)*(sx12-sx23)):
> with(combinat):
> CP := [black, green, violet, blue, red, orange, pink, "SkyBlue"] :
> with(StringTools) :
> for jj from 1 to LC||3 do  for ii from 1 to 4 do a||ii := (Hs||3||jj)[ii] :od : j := 0 : for i1
  from -1 to 1 by 2 do    for i2 from -1 to 1 by 2 do    for i3 from -1 to 1 by 2 do    for i4
  from -1 to 1 by 2 do j := j + 1 : XD := subs(XS = t, x2 = a||1, y2 = i1·sqrt((a||1)·t
  - (a||1)^2), x3 = a||2, y3 = i2·sqrt((a||2)·t - (a||2)^2), x4 = a||3, y4 = i3·sqrt((a||3)·t
  - (a||3)^2), x5 = a||4, y5 = i4·sqrt((a||4)·t - (a||4)^2), x1 = a||1 + i1·sqrt((a||1)·t
  - (a||1)^2), y1 = i1·sqrt((a||1)·t - (a||1)^2) + t/2 - a||1, XK) :  YD :=
  subs(XS = t, x2 = a||1, y2 = i1·sqrt((a||1)·t - (a||1)^2), x3 = a||2, y3 = i2·sqrt((a||2)·t
  - (a||2)^2), x4 = a||3, y4 = i3·sqrt((a||3)·t - (a||3)^2), x5 = a||4, y5 = i4·sqrt((a||4)·t
  - (a||4)^2), x1 = a||1 + i1·sqrt((a||1)·t - (a||1)^2), y1 = i1·sqrt((a||1)·t - (a||1)^2)
  + t/2 - a||1, YK) : T||j := plot([XD, YD, t = a||4 .. ∞], axes = none, color = CP[(j
  mod 8) + 1]) : od;od;od;od; print(display({seq(T||j, j = 1 ..16)})) : print((a
  ||4)[Tajicoid, (3 + 1)[焦点X座標, (seq(a||i, i = 1 ..4))] = No(jj)], 蛭子井博孝,
  FormatTime("%Y-%m-%d-(%a)")) :od:
```



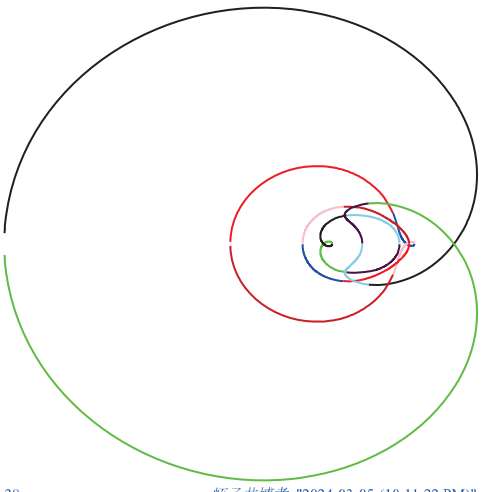
14Tajicoid, 4焦点X座標, 5, 6, 9, 14 = No(1), 蛭子井博孝, "2024-03-05-(10:10:40 PM)"



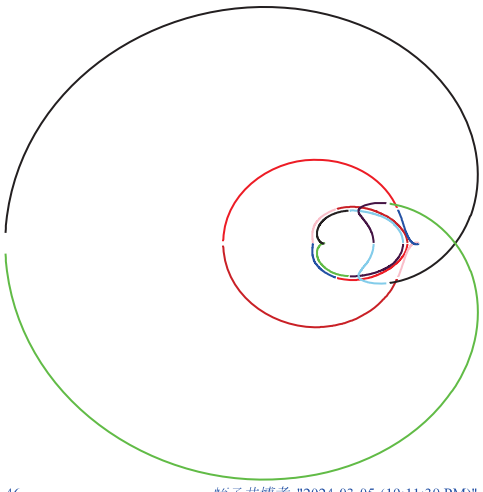
15Tajicoid, 4焦点X座標, 5, 6, 8, 15 = No(2), 蛭子井博孝, "2024-03-05-(10:10:46 PM)"



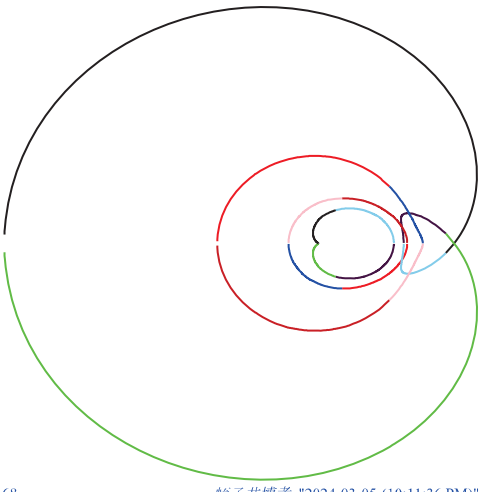
27$_{Tajicoid,\,4\,焦点X座標,\,5,\,6,\,9,\,27\,=No(7)}$, 蛭子井博孝, "2024-03-05-(10:11:17 PM)"



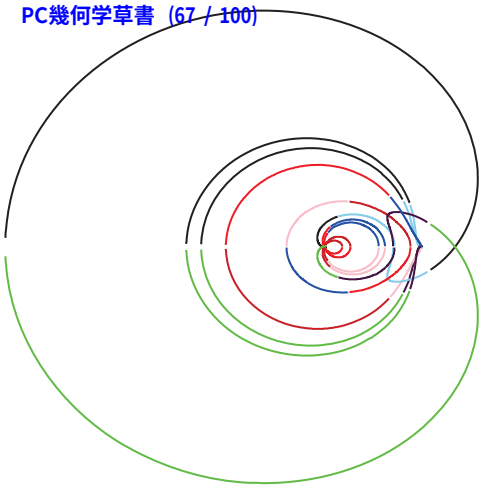
38$_{Tajicoid,\,4\,焦点X座標,\,7,\,10,\,21,\,38\,=No(8)}$, 蛭子井博孝, "2024-03-05-(10:11:22 PM)"



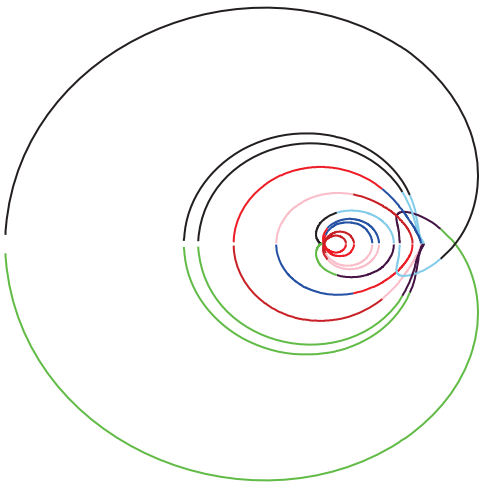
46$_{Tajicoid,\,4\,焦点X座標,\,7,\,10,\,25,\,46\,=No(9)}$, 蛭子井博孝, "2024-03-05-(10:11:30 PM)"



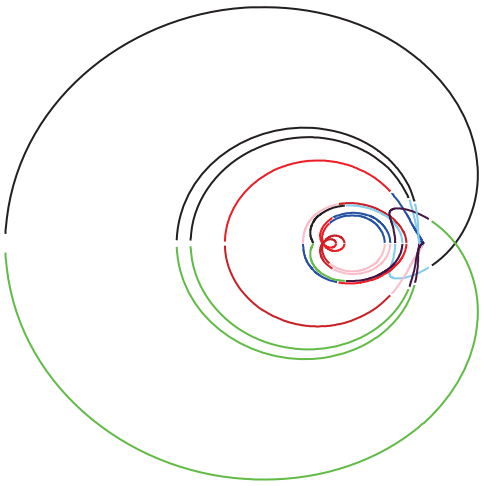
68$_{Tajicoid,\,4\,焦点X座標,\,7,\,10,\,21,\,68\,=No(10)}$, 蛭子井博孝, "2024-03-05-(10:11:36 PM)"



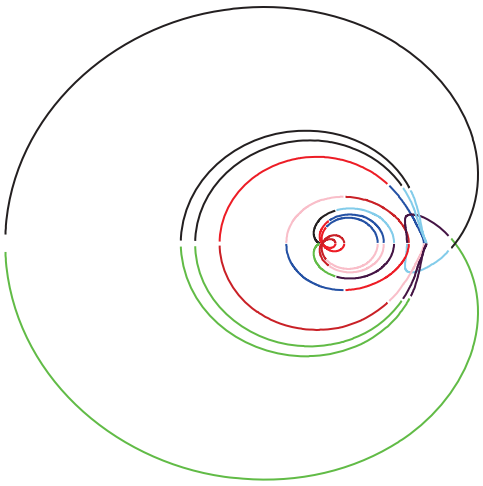
44 $_{Tajicoid,\,5\,焦点X座標,\,5,\,6,\,8,\,15,\,44}$ $_{=No(4)}$, 蛭子井博孝, "2024-03-05-(10:12:34 PM)"



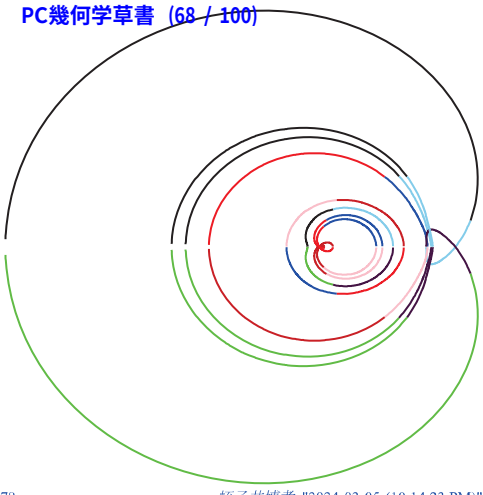
49 $_{Tajicoid,\,5\,焦点X座標,\,5,\,6,\,9,\,14,\,49}$ $_{=No(5)}$, 蛭子井博孝, "2024-03-05-(10:12:44 PM)"



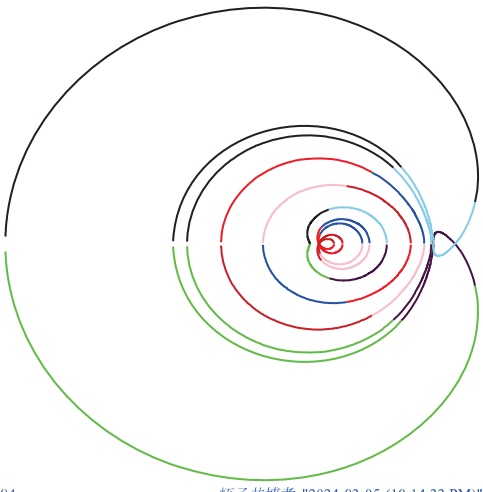
51 $_{Tajicoid,\,5\,焦点X座標,\,5,\,6,\,9,\,20,\,51}$ $_{=No(6)}$, 蛭子井博孝, "2024-03-05-(10:12:59 PM)"



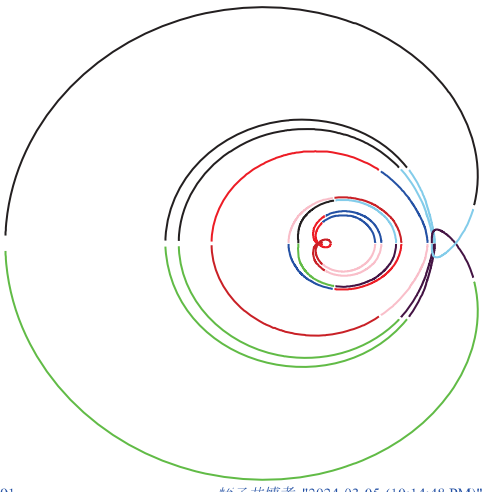
55 $_{Tajicoid,\,5\,焦点X座標,\,5,\,6,\,8,\,16,\,55}$ $_{=No(7)}$, 蛭子井博孝, "2024-03-05-(10:13:15 PM)"



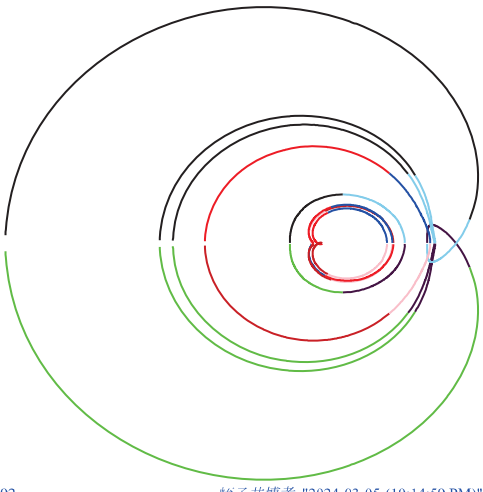
78 $_{Tajicoid,\ 5\ 焦点X座標,\ 5,\ 6,\ 8,\ 18,\ 78}$ $_{=No(12)}$, 蛭子井博孝, "2024-03-05-(10:14:23 PM)"



84 $_{Tajicoid,\ 5\ 焦点X座標,\ 5,\ 6,\ 9,\ 14,\ 84}$ $_{=No(13)}$, 蛭子井博孝, "2024-03-05-(10:14:33 PM)"

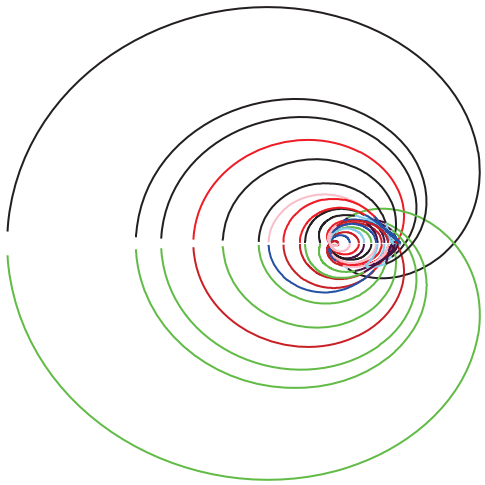


91 $_{Tajicoid,\ 5\ 焦点X座標,\ 5,\ 6,\ 9,\ 20,\ 91}$ $_{=No(14)}$, 蛭子井博孝, "2024-03-05-(10:14:48 PM)"



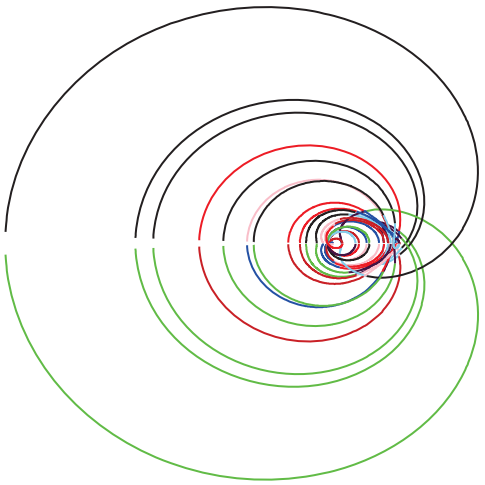
92 $_{Tajicoid,\ 5\ 焦点X座標,\ 5,\ 6,\ 9,\ 27,\ 92}$ $_{=No(15)}$, 蛭子井博孝, "2024-03-05-(10:14:59 PM)"

```
> sx23 := subs(X1 = vx23, Y1 = vy23, X2 = vx34, Y2 = vy34, XP) :
> sy23 := subs(X1 = vx23, Y1 = vy23, X2 = vx34, Y2 = vy34, YP) :

> # (X1,Y1) to (X2,Y2) wo tooru Line he (XS,0) yori kudasita suisen no asi (XP,YP):
> #shuusei:
> s:=(-X1*X2+X1^2+Y1^2-Y1*Y2+XS*(X2-X1))/((X1-X2)^2+(Y1-Y2)^2):
> #shuseimae s:=(-X1*X2-Y1*Y2+X2*XS)/((X1-X2)^2+(Y1-Y2)^2):

> XP:=s*(X2-X1)+X1:
> YP:=s*(Y2-Y1)+Y1:

> qx21:=subs(X1=x1,Y1=y1,X2=x2,Y2=y2,XP):
> qy21:=subs(X1=x1,Y1=y1,X2=x2,Y2=y2,YP):
> qx32:=subs(X1=x2,Y1=y2,X2=x3,Y2=y3,XP):
> qy32:=subs(X1=x2,Y1=y2,X2=x3,Y2=y3,YP):
> qx43:=subs(X1=x3,Y1=y3,X2=x4,Y2=y4,XP):
> qy43:=subs(X1=x3,Y1=y3,X2=x4,Y2=y4,YP):
> qx54:=subs(X1=x4,Y1=y4,X2=x5,Y2=y5,XP):
> qy54:=subs(X1=x4,Y1=y4,X2=x5,Y2=y5,YP):
> qx65:=subs(X1=x5,Y1=y5,X2=x6,Y2=y6,XP):
> qy65:=subs(X1=x5,Y1=y5,X2=x6,Y2=y6,YP):
> qx76:=subs(X1=x6,Y1=y6,X2=x7,Y2=y7,XP):
> qy76:=subs(X1=x6,Y1=y6,X2=x7,Y2=y7,YP):


> rx21:=subs(X1=qx21,Y1=qy21,X2=qx32,Y2=qy32,XP):
> ry21:=subs(X1=qx21,Y1=qy21,X2=qx32,Y2=qy32,YP):
> rx32:=subs(X1=qx32,Y1=qy32,X2=qx43,Y2=qy43,XP):
> ry32:=subs(X1=qx32,Y1=qy32,X2=qx43,Y2=qy43,YP):
> rx43:=subs(X1=qx43,Y1=qy43,X2=qx54,Y2=qy54,XP):
> ry43:=subs(X1=qx43,Y1=qy43,X2=qx54,Y2=qy54,YP):
> rx54:=subs(X1=qx54,Y1=qy54,X2=qx65,Y2=qy65,XP):
> ry54:=subs(X1=qx54,Y1=qy54,X2=qx65,Y2=qy65,YP):
> rx65:=subs(X1=qx65,Y1=qy65,X2=qx76,Y2=qy76,XP):
> ry65:=subs(X1=qx65,Y1=qy65,X2=qx76,Y2=qy76,YP):

> vx21:=subs(X1=rx21,Y1=ry21,X2=rx32,Y2=ry32,XP):
> vy21:=subs(X1=rx21,Y1=ry21,X2=rx32,Y2=ry32,YP):
> vx32:=subs(X1=rx32,Y1=ry32,X2=rx43,Y2=ry43,XP):
> vy32:=subs(X1=rx32,Y1=ry32,X2=rx43,Y2=ry43,YP):
> vx43:=subs(X1=rx43,Y1=ry43,X2=rx54,Y2=ry54,XP):
> vy43:=subs(X1=rx43,Y1=ry43,X2=rx54,Y2=ry54,YP):

> vx54:=subs(X1=rx54,Y1=ry54,X2=rx65,Y2=ry65,XP):
> vy54:=subs(X1=rx54,Y1=ry54,X2=rx65,Y2=ry65,YP):
```

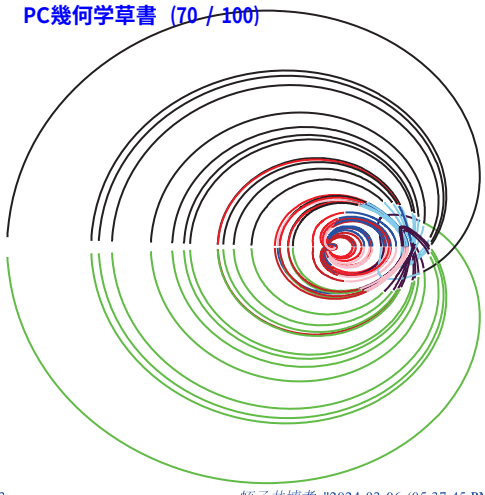


62 Tajicoid, 6 焦点X座標, 5, 6, 9, 14, 33, 62 =No(1), 蛭子井博孝, "2024-03-05-(11:46:10 PM)"

```
> wx21:=subs(X1=vx21,Y1=vy21,X2=vx32,Y2=vy32,XP):
> wy21:=subs(X1=vx21,Y1=vy21,X2=vx32,Y2=vy32,YP):
> wx32:=subs(X1=vx32,Y1=vy32,X2=vx43,Y2=vy43,XP):
> wy32:=subs(X1=vx32,Y1=vy32,X2=vx43,Y2=vy43,YP):
> wx43:=subs(X1=vx43,Y1=vy43,X2=vx54,Y2=vy54,XP):
> wy43:=subs(X1=vx43,Y1=vy43,X2=vx54,Y2=vy54,YP):
> sx21:=subs(X1=wx21,Y1=wy21,X2=wx32,Y2=wy32,XP):
> sy21:=subs(X1=wx21,Y1=wy21,X2=wx32,Y2=wy32,YP):
> sx32:=subs(X1=wx32,Y1=wy32,X2=wx43,Y2=wy43,XP):
> sy32:=subs(X1=wx32,Y1=wy32,X2=wx43,Y2=wy43,YP):


> # (sx12,sy12)-(sx23,sy23)=line kouten(XK,YK) (sx21,sy21)-(sx32,sy32)=line:

> XK:=-((sx12*sy23-sy12*sx23)*(sx21-sx32)-(sx21*sy32-sx32*sy21)*(sx12-sx23))/((sy12-
  sy23)*(sx21-sx32)-(sy21-sy32)*(sx12-sx23)):
> YK:=((sy12-sy23)*(sx21*sy32-sx32*sy21)-(sy21-sy32)*(sx12*sy23-sx23*sy12))/((sy12-sy23)
  *(sx21-sx32)-(sy21-sy32)*(sx12-sx23)):


> CP := [black, green, violet, blue, red, orange, pink, "SkyBlue"] :
> with(StringTools) :
> for jj from 1 to 4 do for ii from 1 to 6 do a||ii := (Hs||5||jj)[ii] :od : j := 0 : for i1 from
    −1 to 1 by 2 do for i2 from −1 to 1 by 2 do for i3 from −1 to 1 by 2 do for i4 from
    −1 to 1 by 2 do for i5 from −1 to 1 by 2 do for i6 from −1 to 1 by 2 do j := j + 1 :
    XD := subs(XS = t, x2 = a||1, y2 = i1·sqrt((a||1)·t − (a||1)^2), x3 = a||2, y3 = i2·sqrt((a
    ||2)·t − (a||2)^2), x4 = a||3, y4 = i3·sqrt((a||3)·t − (a||3)^2), x5 = a||4, y5 = i4·sqrt((a
    ||4)·t − (a||4)^2), x6 = a||5, y6 = i5·sqrt((a||5)·t − (a||5)^2), x7 = a||6, y7 = i6·sqrt((a
    ||6)·t − (a||6)^2), x1 = a||1 + i1·sqrt((a||1)·t − (a||1)^2), y1 = i1·sqrt((a||1)·t
    − (a||1)^2) + t/2 − a||1, XK) :  YD := subs(XS = t, x2 = a||1, y2 = i1·sqrt((a
    ||1)·t − (a||1)^2), x3 = a||2, y3 = i2·sqrt((a||2)·t − (a||2)^2), x4 = a||3, y4 = i3·sqrt((a
    ||3)·t − (a||3)^2), x5 = a||4, y5 = i4·sqrt((a||4)·t − (a||4)^2), x6 = a||5, y6 = i5·sqrt((a
    ||5)·t − (a||5)^2), x7 = a||6, y7 = i6·sqrt((a||6)·t − (a||6)^2), x1 = a||1 + i1·sqrt((a
    ||1)·t − (a||1)^2) + t/2 − a||1, YK) : T||j :=
    plot([XD, YD, t = a||6 .. ∞], axes = none, color = CP[(j mod 8) + 1]) : od;od;od;od;od;
    od; print(display({seq(T||j, j = 1..64)})) : print((a||6)[Tajicoid, (5 + 1)][焦点X座標,
    (seq(a||i, i = 1..6))] = No(jj)], 蛭子井博孝, FormatTime("%Y-%m-%d-(%r)")) : od:
```

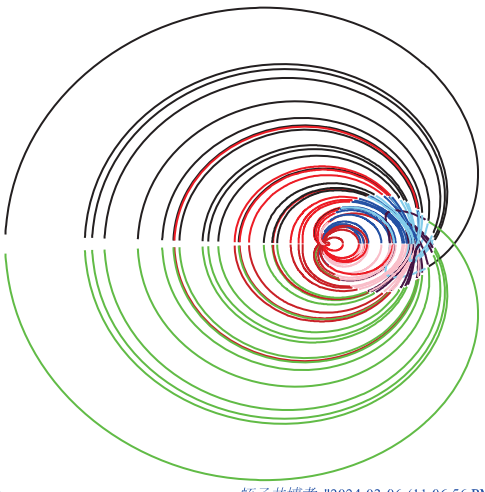


69 Tajicoid, 6 焦点X座標, 5, 6, 8, 15, 26, 69 =No(2), 蛭子井博孝, "2024-03-06-(01:32:24 AM)"

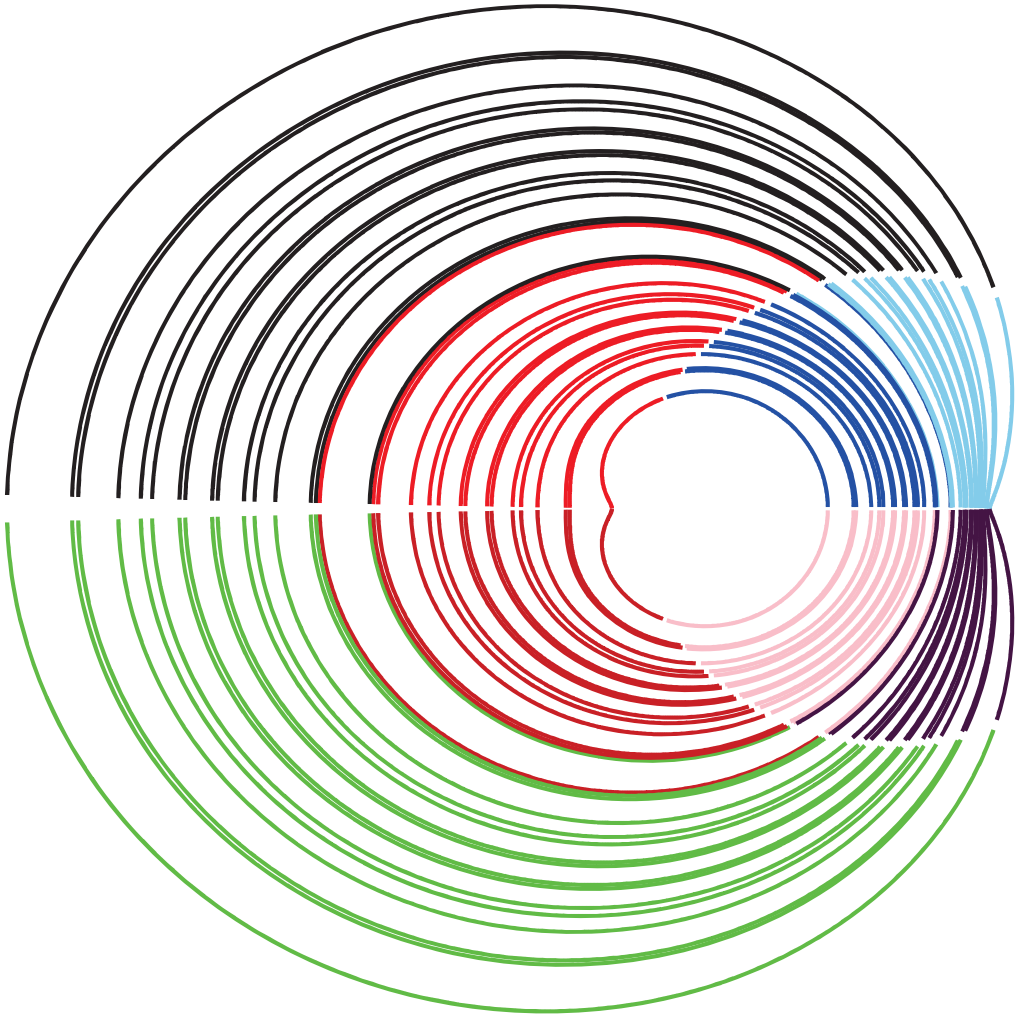


$213_{Tajicoid,\,7_{焦点X座標,\,5,\,6,\,8,\,16,\,39,\,74,\,213}=No(3)}$, *蛭子井博孝*, "2024-03-06-(05:37:45 PM)"

$j := 0$

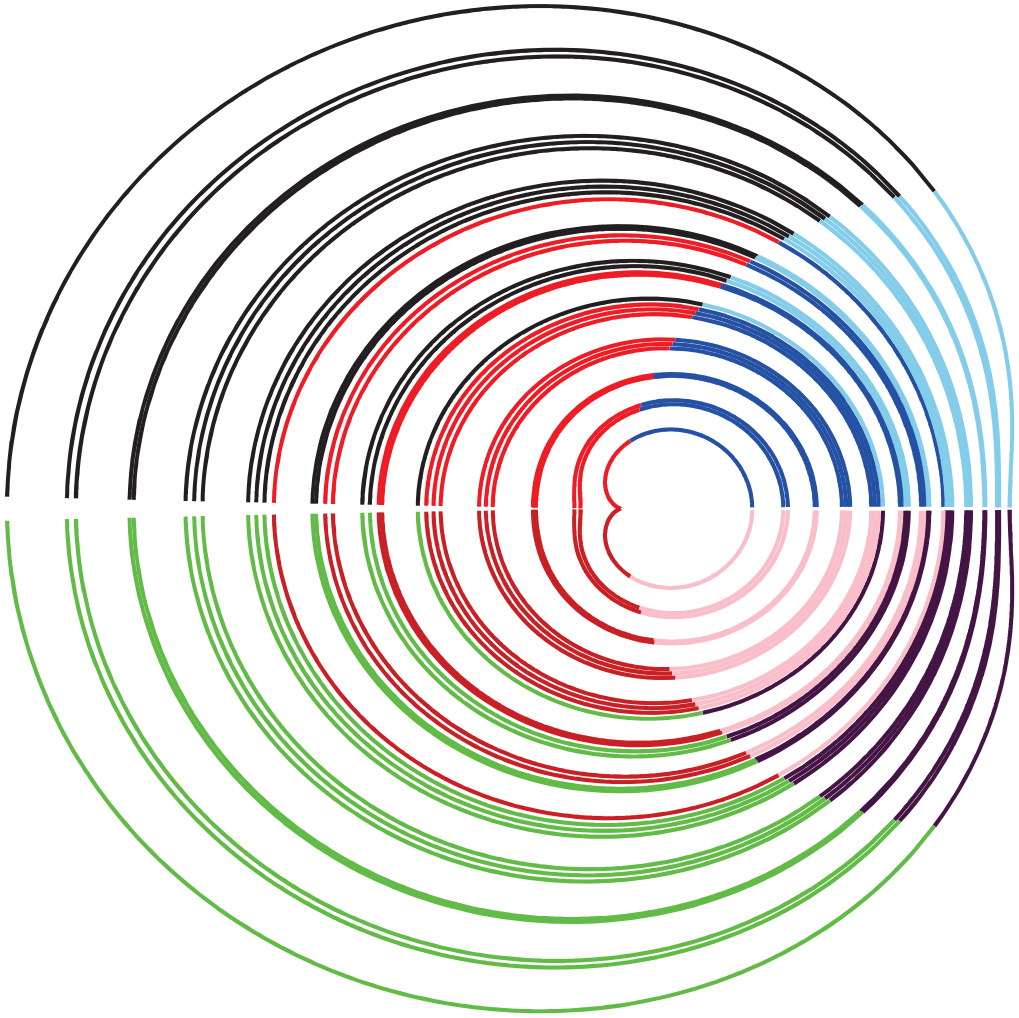


$262_{Tajicoid,\,7_{焦点X座標,\,5,\,6,\,8,\,15,\,26,\,133,\,262}=No(4)}$, *蛭子井博孝*, "2024-03-06-(11:06:56 PM)"



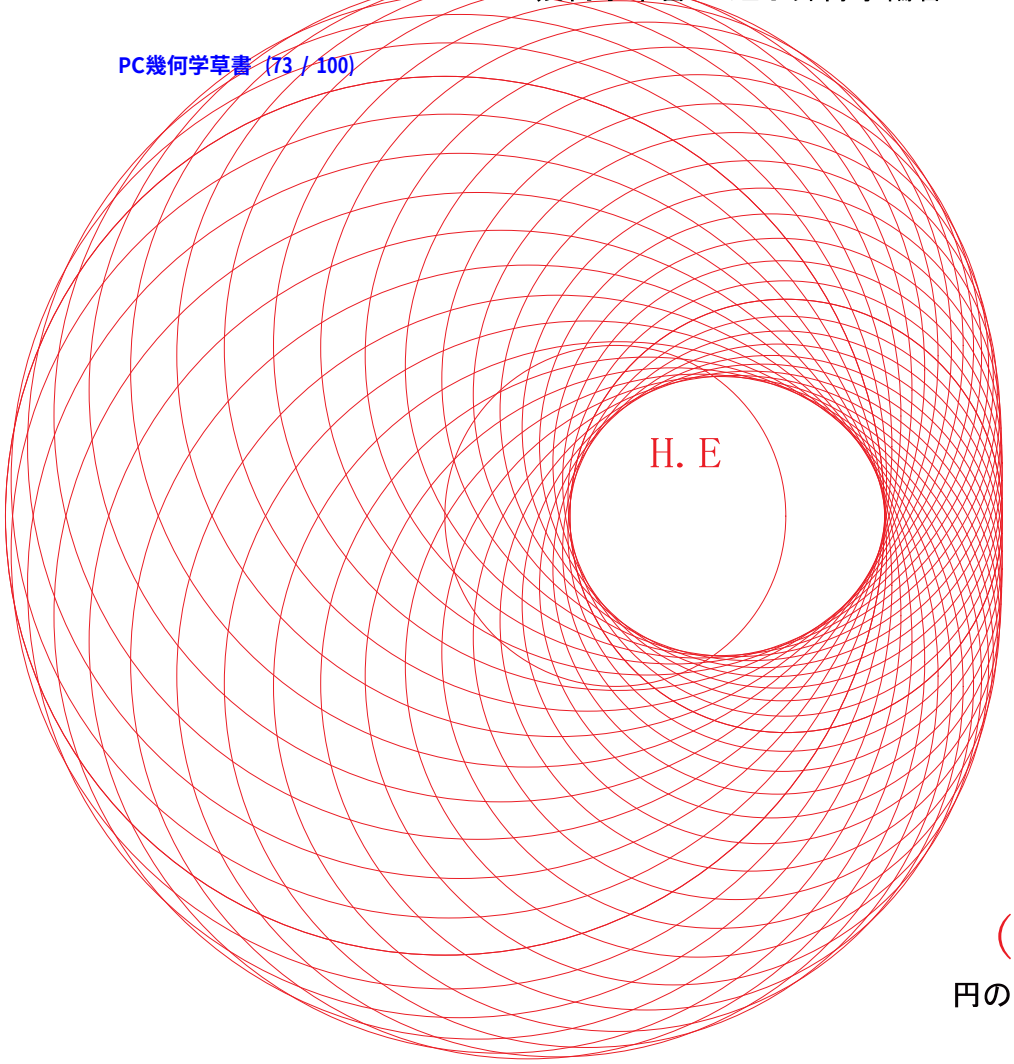
Tajicoid, 7, *No*(84), 4659, *焦点X座標*, [5, 6, 15, 26, 134, 1556, 4659], *蛭子井博孝*, *H*•*E*, "2024-02-04-(09:21:03 PM)"

$$j := 0$$



Tajicoid, 7, *No*(250), 9314, *焦点X座標*, [6, 8, 26, 69, 134, 1556, 9314], *蛭子井博孝*, *H*・*E*, "2024-02-05-(03:30:07 AM)" **(7)**

>

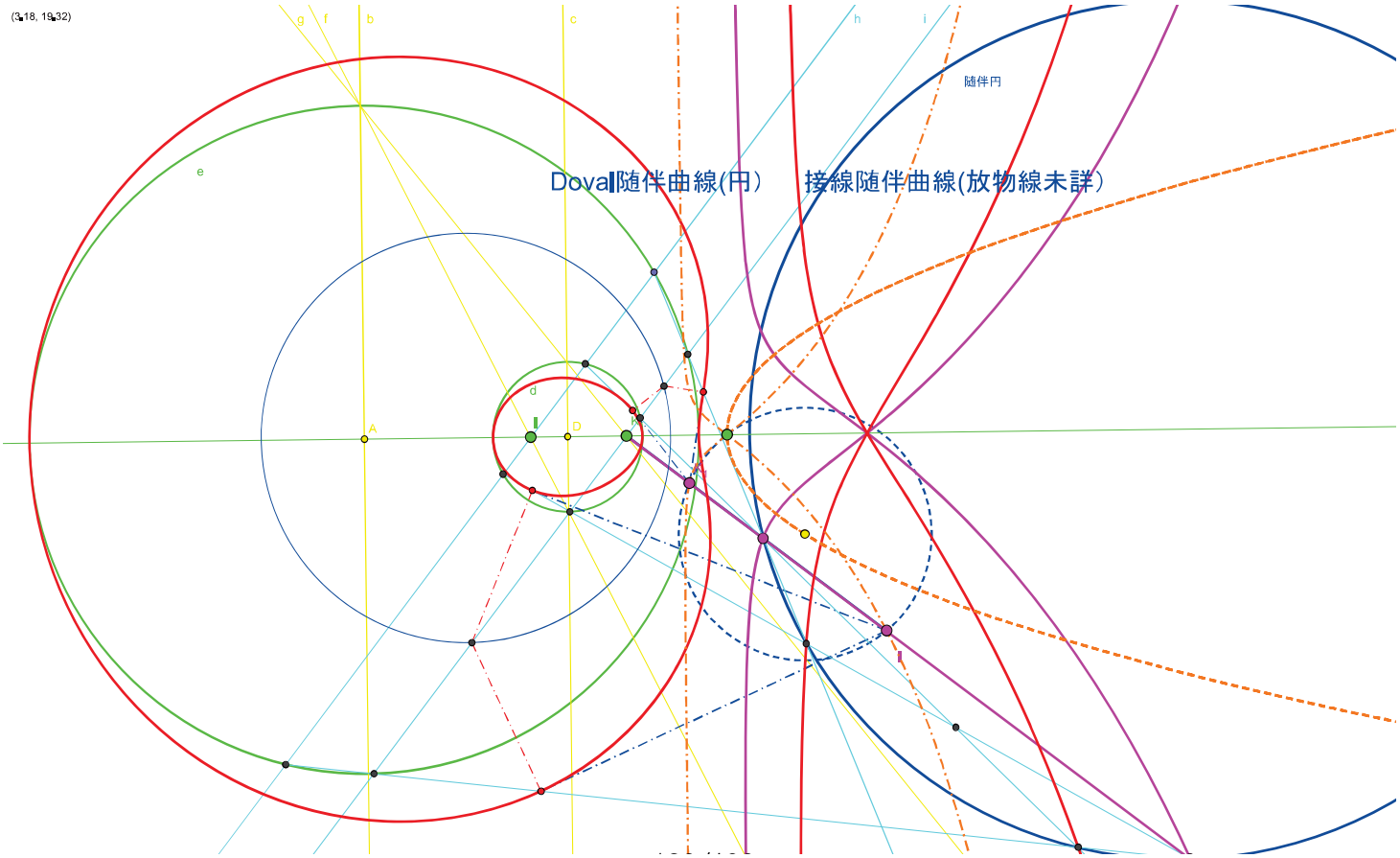


(4) [2]−2−bc

円の包絡によるDoval

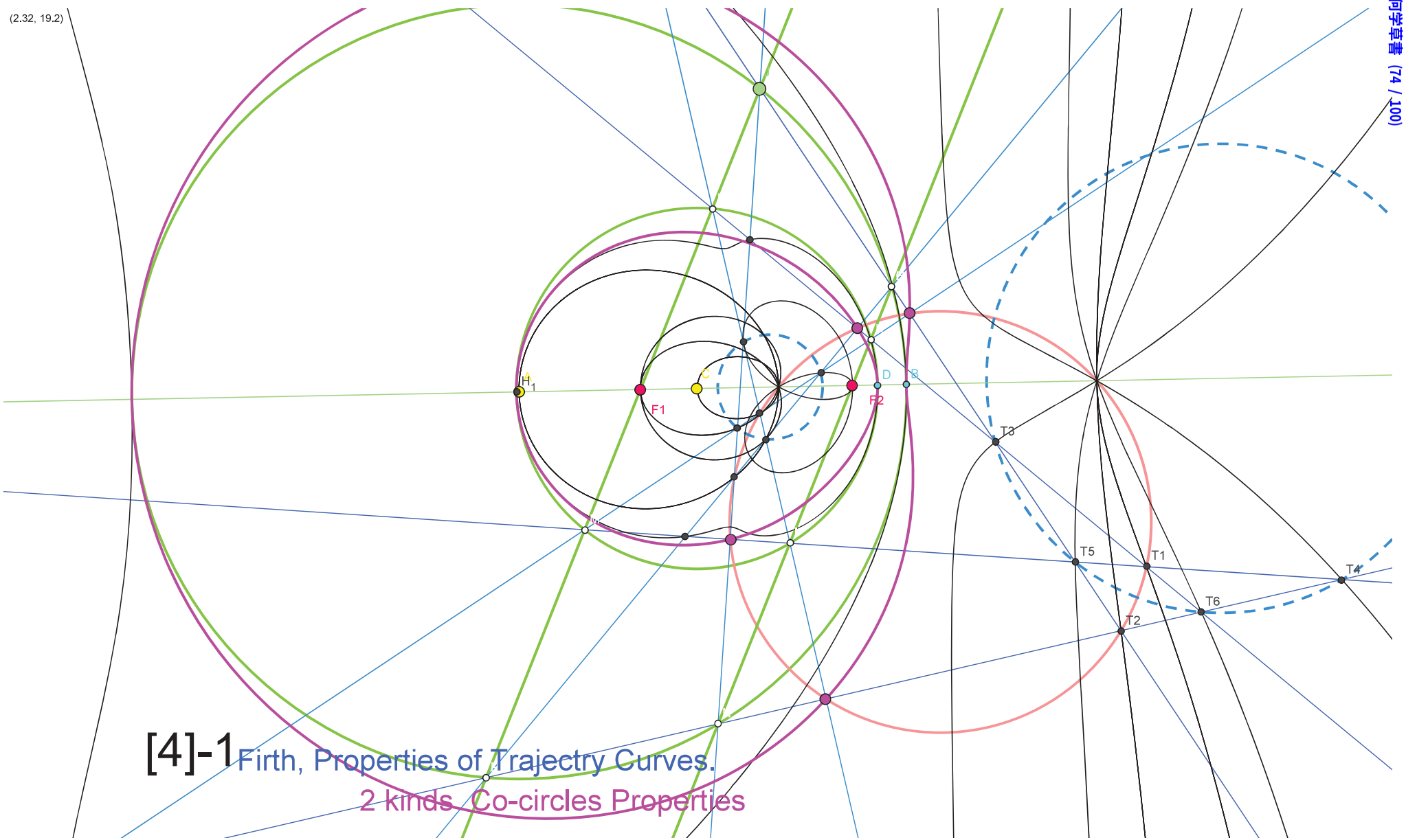
Dovalの随伴曲線

蛭子井博孝 - 2014-12-21



Doval and Appending Curves defined by 2 circles and One Parallel line on Similar points

蛭子井博孝 - 2012/07/29 - 縮尺（cm単位）: 1:1 (x), 1:1 (y)



```
> # LEVEL NUMBER 100 made by H.E:'23-2-22 RV:
> with(StringTools):
> print(蛭子井博孝, [2, 1000], LEVEL NUMBER, FormatTime("%Y-%m-%d-(%r)")) :for hj
  from 1 to 20 do LC||hj := 0 : LH||hj := { }od: c := 0 :for h from 2 to 100 do
  if isprime(h) then c := c + 1 :if c ≤ 100 or c mod 100 = 0 then print(LvN{0}[No(c)]
  = h[Prm]) fi else : n := h :for le from 1 to 20 do fs := 0 : ft := n : fp := 2 : nc := 0 :for p
  from 1 to n/2 do if ft mod fp = 0 then nc := nc + 1 : ft := ft/fp : FT||nc := fp : fs := fs
  + fp else fp := nextprime(fp) fi:od: l||le := n : H||le := n[ [seq( (FT||j), j = 1 ..nc) ]SM
  = fs] :if not isprime(fs) then n := fs else LC||le := LC||le + 1 : LH||le := LH||le
  union {h[Sp = fs]} : if le ≥ 5 then print(LvN{le}[No(LC||le)] = h, seq(H||j, j = 1
  ..4)[下につづく]) : print(l||5, seq(H||j, j = 5 .. le), Sp = fs)
  else print(LvN{le}[No(LC||le)] = h, seq(H||j, j = 1 ..le), Sp = fs) fi : print( ) :break if:
  od fi:if h mod 100 = 0 then print( ) : print(IN, [2, h]) : print(LCTaB(c[{0}], seq( (LC
  ||j)[j], j = 1 ..8))) : print(LCTab(seq( (LC||j)[j], j = 9 ..16))) : print( )fi:od:
  print(蛭子井博孝, [2, 1000], LEVEL NUMBER, FormatTime("%Y-%m-%d-(%r)")) :
```

蛭子井博孝, [2, 1000], *LEVEL NUMBER*, "2024-02-22-(06:42:28 AM)"

$$LvN\{0\}_{No(1)} = 2_{Prm}$$

$$LvN\{0\}_{No(2)} = 3_{Prm}$$

$$LvN\{0\}_{No(3)} = 5_{Prm}$$

$$LvN\{1\}_{No(1)} = 6, 6_{[2,3]\ SM=5},\ Sp = 5$$

$$LvN\{0\}_{No(4)} = 7_{Prm}$$

$$LvN\{2\}_{No(1)} = 8, 8_{[2,2,2]\ SM=6}, 6_{[2,3]\ SM=5},\ Sp = 5$$

$$LvN\{2\}_{No(2)} = 9, 9_{[3,3]\ SM=6}, 6_{[2,3]\ SM=5},\ Sp = 5$$

$$LvN\{1\}_{No(2)} = 10, 10_{[2,5]\ SM=7},\ Sp = 7$$

$$LvN\{0\}_{No(5)} = 11_{Prm}$$

$$LvN\{1\}_{No(3)} = 12, 12_{[2,2,3]\ SM=7},\ Sp = 7$$

$$LvN\{0\}_{No(6)} = 13_{Prm}$$

$$LvN\{3\}_{No(1)} = 14, 14_{[2,7]\ SM=9}, 9_{[3,3]\ SM=6}, 6_{[2,3]\ SM=5},\ Sp = 5$$

$$LvN\{3\}_{No(2)} = 15, 15_{[3,5]\ SM=8}, 8_{[2,2,2]\ SM=6}, 6_{[2,3]\ SM=5},\ Sp = 5$$

$$LvN\{3\}_{No(3)} = 16, 16_{[2,2,2,2]\ SM=8}, 8_{[2,2,2]\ SM=6}, 6_{[2,3]\ SM=5},\ Sp = 5$$

$$LvN\{0\}_{No(7)} = 17_{Prm}$$

$$LvN\{3\}_{No(4)} = 18, 18_{[2,3,3]\ SM=8}, 8_{[2,2,2]\ SM=6}, 6_{[2,3]\ SM=5}, Sp = 5$$

$$LvN\{0\}_{No(8)} = 19_{Prm}$$

$$LvN\{3\}_{No(5)} = 20, 20_{[2,2,5]\ SM=9}, 9_{[3,3]\ SM=6}, 6_{[2,3]\ SM=5}, Sp = 5$$

$$LvN\{2\}_{No(3)} = 21, 21_{[3,7]\ SM=10}, 10_{[2,5]\ SM=7}, Sp = 7$$

$$LvN\{1\}_{No(4)} = 22, 22_{[2,11]\ SM=13}, Sp = 13$$

$$LvN\{0\}_{No(9)} = 23_{Prm}$$

$$LvN\{3\}_{No(6)} = 24, 24_{[2,2,2,3]\ SM=9}, 9_{[3,3]\ SM=6}, 6_{[2,3]\ SM=5}, Sp = 5$$

$$LvN\{2\}_{No(4)} = 25, 25_{[5,5]\ SM=10}, 10_{[2,5]\ SM=7}, Sp = 7$$

$$LvN\{4\}_{No(1)} = 26, 26_{[2,13]\ SM=15}, 15_{[3,5]\ SM=8}, 8_{[2,2,2]\ SM=6}, 6_{[2,3]\ SM=5}, Sp = 5$$

$$LvN\{3\}_{No(7)} = 27, 27_{[3,3,3]\ SM=9}, 9_{[3,3]\ SM=6}, 6_{[2,3]\ SM=5}, Sp = 5$$

$$LvN\{1\}_{No(5)} = 28, 28_{[2,2,7]\ SM=11}, Sp = 11$$

$$LvN\{0\}_{No(10)} = 29_{Prm}$$

$$LvN\{2\}_{No(5)} = 30, 30_{[2,3,5]\ SM=10}, 10_{[2,5]\ SM=7}, Sp = 7$$

$$LvN\{0\}_{No(11)} = 31_{Prm}$$

$$LvN\{2\}_{No(6)} = 32, 32_{[2,2,2,2,2]\ SM=10}, 10_{[2,5]\ SM=7}, Sp = 7$$

$$LvN\{4\}_{No(2)} = 33, 33_{[3,11]\ SM=14}, 14_{[2,7]\ SM=9}, 9_{[3,3]\ SM=6}, 6_{[2,3]\ SM=5}, Sp = 5$$

$$LvN\{1\}_{No(6)} = 34, 34_{[2,17]\ SM=19}, Sp = 19$$

$$LvN\{2\}_{No(7)} = 35, 35_{[5,7]\ SM=12}, 12_{[2,2,3]\ SM=7}, Sp = 7$$

$$LvN\{2\}_{No(8)} = 36, 36_{[2,2,3,3]\ SM=10}, 10_{[2,5]\ SM=7}, Sp = 7$$

$$LvN\{0\}_{No(12)} = 37_{Prm}$$

$$LvN\{3\}_{No(8)} = 38, 38_{[2,19]\ SM=21}, 21_{[3,7]\ SM=10}, 10_{[2,5]\ SM=7}, Sp = 7$$

$$LvN\{4\}_{No(3)} = 39, 39_{[3,13]\ SM=16}, 16_{[2,2,2,2]\ SM=8}, 8_{[2,2,2]\ SM=6}, 6_{[2,3]\ SM=5}, Sp = 5$$

$$LvN\{1\}_{No(7)} = 40, 40_{[2,2,2,5]\ SM=11}, Sp = 11$$

$$LvN\{0\}_{No(13)} = 41_{Prm}$$

$$LvN\{2\}_{No(9)} = 42, 42_{[2,3,7]\ SM=12}, 12_{[2,2,3]\ SM=7}, Sp = 7$$

$$LvN\{0\}_{No(14)} = 43_{Prm}$$

$$LvN\{4\}_{No(4)} = 44, 44_{[2,2,11]\ SM=15}, 15_{[3,5]\ SM=8}, 8_{[2,2,2]\ SM=6}, 6_{[2,3]\ SM=5}, Sp = 5$$

$$LvN\{1\}_{No(8)} = 45, 45_{[3,3,5]\ SM=11}, Sp = 11$$

$$LvN\{3\}_{No(9)} = 46, 46_{[2,23]\ SM=25}, 25_{[5,5]\ SM=10}, 10_{[2,5]\ SM=7}, Sp = 7$$

$$LvN\{0\}_{No(15)} = 47_{Prm}$$

$$LvN\{1\}_{No(9)} = 48, 48_{[2,2,2,2,3]\ SM=11}, Sp = 11$$

$$LvN\{4\}_{No(5)} = 49, 49_{[7,7]\ SM=14}, 14_{[2,7]\ SM=9}, 9_{[3,3]\ SM=6}, 6_{[2,3]\ SM=5}, Sp = 5$$

$$LvN\{2\}_{No(10)} = 50, 50_{[2,5,5]\ SM=12}, 12_{[2,2,3]\ SM=7}, Sp = 7$$

$$LvN\{4\}_{No(6)} = 51, 51_{[3,17]\ SM=20}, 20_{[2,2,5]\ SM=9}, 9_{[3,3]\ SM=6}, 6_{[2,3]\ SM=5}, Sp = 5$$

$$LvN\{1\}_{No(10)} = 52, 52_{[2,2,13]\ SM=17}, Sp = 17$$

$$LvN\{0\}_{No(16)} = 53_{Prm}$$

$$LvN\{1\}_{No(11)} = 54, 54_{[2,3,3,3]\ SM=11}, Sp = 11$$

$$LvN\{4\}_{No(7)} = 55, 55_{[5,11]\ SM=16}, 16_{[2,2,2,2]\ SM=8}, 8_{[2,2,2]\ SM=6}, 6_{[2,3]\ SM=5}, Sp = 5$$

$$LvN\{1\}_{No(12)} = 56, 56_{[2,2,2,7]\ SM=13}, Sp = 13$$

$$LvN\{2\}_{No(11)} = 57, 57_{[3,19]\ SM=22}, 22_{[2,11]\ SM=13}, Sp = 13$$

$$LvN\{1\}_{No(13)} = 58, 58_{[2,29]\ SM=31}, Sp = 31$$

$$LvN\{0\}_{No(17)} = 59_{Prm}$$

$$LvN\ \{2\}_{No(12)} = 60,\ 60_{[2,\ 2,\ 3,\ 5]\ SM=12},\ 12_{[2,\ 2,\ 3]\ SM=7},\ Sp = 7$$

$$LvN\ \{0\}_{No(18)} = 61_{Prm}$$

$$LvN\ \{5\}_{No(1)} = 62,\ \left(62_{[2,\ 31]\ SM=33},\ 33_{[3,\ 11]\ SM=14},\ 14_{[2,\ 7]\ SM=9},\ 9_{[3,\ 3]\ SM=6}\right)\ 下につづく$$
$$6,\ 6_{[2,\ 3]\ SM=5},\ Sp = 5$$

$$LvN\ \{1\}_{No(14)} = 63,\ 63_{[3,\ 3,\ 7]\ SM=13},\ Sp = 13$$

$$LvN\ \{2\}_{No(13)} = 64,\ 64_{[2,\ 2,\ 2,\ 2,\ 2]\ SM=12},\ 12_{[2,\ 2,\ 3]\ SM=7},\ Sp = 7$$

$$LvN\ \{4\}_{No(8)} = 65,\ 65_{[5,\ 13]\ SM=18},\ 18_{[2,\ 3,\ 3]\ SM=8},\ 8_{[2,\ 2,\ 2]\ SM=6},\ 6_{[2,\ 3]\ SM=5},\ Sp = 5$$

$$LvN\ \{4\}_{No(9)} = 66,\ 66_{[2,\ 3,\ 11]\ SM=16},\ 16_{[2,\ 2,\ 2,\ 2]\ SM=8},\ 8_{[2,\ 2,\ 2]\ SM=6},\ 6_{[2,\ 3]\ SM=5},\ Sp = 5$$

$$LvN\ \{0\}_{No(19)} = 67_{Prm}$$

$$LvN\ \{3\}_{No(10)} = 68,\ 68_{[2,\ 2,\ 17]\ SM=21},\ 21_{[3,\ 7]\ SM=10},\ 10_{[2,\ 5]\ SM=7},\ Sp = 7$$

$$LvN\ \{5\}_{No(2)} = 69,\ \left(69_{[3,\ 23]\ SM=26},\ 26_{[2,\ 13]\ SM=15},\ 15_{[3,\ 5]\ SM=8},\ 8_{[2,\ 2,\ 2]\ SM=6}\right)\ 下につづく$$
$$6,\ 6_{[2,\ 3]\ SM=5},\ Sp = 5$$

$$LvN\ \{4\}_{No(10)} = 70,\ 70_{[2,\ 5,\ 7]\ SM=14},\ 14_{[2,\ 7]\ SM=9},\ 9_{[3,\ 3]\ SM=6},\ 6_{[2,\ 3]\ SM=5},\ Sp = 5$$

$$LvN\ \{0\}_{No(20)} = 71_{Prm}$$

$$LvN\ \{2\}_{No(14)} = 72,\ 72_{[2,\ 2,\ 2,\ 3,\ 3]\ SM=12},\ 12_{[2,\ 2,\ 3]\ SM=7},\ Sp = 7$$

$$LvN\ \{0\}_{No(21)} = 73_{Prm}$$

$$LvN\ \{5\}_{No(3)} = 74,\ \left(74_{[2,\ 37]\ SM=39},\ 39_{[3,\ 13]\ SM=16},\ 16_{[2,\ 2,\ 2,\ 2]\ SM=8},\ 8_{[2,\ 2,\ 2]\ SM=6}\right)\ 下につづく$$
$$6,\ 6_{[2,\ 3]\ SM=5},\ Sp = 5$$

$$LvN\ \{1\}_{No(15)} = 75,\ 75_{[3,\ 5,\ 5]\ SM=13},\ Sp = 13$$

$$LvN\ \{1\}_{No(16)} = 76,\ 76_{[2,\ 2,\ 19]\ SM=23},\ Sp = 23$$

$$LvN\ \{4\}_{No(11)} = 77,\ 77_{[7,\ 11]\ SM=18},\ 18_{[2,\ 3,\ 3]\ SM=8},\ 8_{[2,\ 2,\ 2]\ SM=6},\ 6_{[2,\ 3]\ SM=5},\ Sp = 5$$

$$LvN\ \{4\}_{No(12)} = 78,\ 78_{[2,\ 3,\ 13]\ SM=18},\ 18_{[2,\ 3,\ 3]\ SM=8},\ 8_{[2,\ 2,\ 2]\ SM=6},\ 6_{[2,\ 3]\ SM=5},\ Sp = 5$$

$$LvN\ \{0\}_{No(22)} = 79_{Prm}$$

$$LvN\ \{1\}_{No(17)} = 80,\ 80_{[2,\ 2,\ 2,\ 2,\ 5]\ SM=13},\ Sp = 13$$

$$LvN\ \{2\}_{No(15)} = 81,\ 81_{[3,\ 3,\ 3,\ 3]\ SM=12},\ 12_{[2,\ 2,\ 3]\ SM=7},\ Sp = 7$$

$$LvN\ \{1\}_{No(18)} = 82,\ 82_{[2,\ 41]\ SM=43},\ Sp = 43$$

$$LvN\ \{0\}_{No(23)} = 83_{Prm}$$

$$LvN\ \{4\}_{No(13)} = 84,\ 84_{[2,\ 2,\ 3,\ 7]\ SM=14},\ 14_{[2,\ 7]\ SM=9},\ 9_{[3,\ 3]\ SM=6},\ 6_{[2,\ 3]\ SM=5},\ Sp = 5$$

$$LvN\ \{2\}_{No(16)} = 85,\ 85_{[5,\ 17]\ SM=22},\ 22_{[2,\ 11]\ SM=13},\ Sp = 13$$

$$LvN\ \{2\}_{No(17)} = 86,\ 86_{[2,\ 43]\ SM=45},\ 45_{[3,\ 3,\ 5]\ SM=11},\ Sp = 11$$

$$LvN\ \{3\}_{No(11)} = 87,\ 87_{[3,\ 29]\ SM=32},\ 32_{[2,\ 2,\ 2,\ 2,\ 2]\ SM=10},\ 10_{[2,\ 5]\ SM=7},\ Sp = 7$$

$$LvN\ \{1\}_{No(19)} = 88,\ 88_{[2,\ 2,\ 2,\ 11]\ SM=17},\ Sp = 17$$

$$LvN\ \{0\}_{No(24)} = 89_{Prm}$$

$$LvN\ \{1\}_{No(20)} = 90,\ 90_{[2,\ 3,\ 3,\ 5]\ SM=13},\ Sp = 13$$

$$LvN\ \{4\}_{No(14)} = 91,\ 91_{[7,\ 13]\ SM=20},\ 20_{[2,\ 2,\ 5]\ SM=9},\ 9_{[3,\ 3]\ SM=6},\ 6_{[2,\ 3]\ SM=5},\ Sp = 5$$

$$LvN\ \{4\}_{No(15)} = 92,\ 92_{[2,\ 2,\ 23]\ SM=27},\ 27_{[3,\ 3,\ 3]\ SM=9},\ 9_{[3,\ 3]\ SM=6},\ 6_{[2,\ 3]\ SM=5},\ Sp = 5$$

$$LvN\ \{2\}_{No(18)} = 93,\ 93_{[3,\ 31]\ SM=34},\ 34_{[2,\ 17]\ SM=19},\ Sp = 19$$

$$LvN\ \{5\}_{No(4)} = 94,\ \left(94_{[2,\ 47]\ SM=49},\ 49_{[7,\ 7]\ SM=14},\ 14_{[2,\ 7]\ SM=9},\ 9_{[3,\ 3]\ SM=6}\right)$$ 下につづく

$$6,\ 6_{[2,\ 3]\ SM=5},\ Sp = 5$$

$$LvN\ \{4\}_{No(16)} = 95,\ 95_{[5,\ 19]\ SM=24},\ 24_{[2,\ 2,\ 2,\ 3]\ SM=9},\ 9_{[3,\ 3]\ SM=6},\ 6_{[2,\ 3]\ SM=5},\ Sp = 5$$

$$LvN\ \{1\}_{No(21)} = 96,\ 96_{[2,\ 2,\ 2,\ 2,\ 2,\ 3]\ SM=13},\ Sp = 13$$

$$LvN\ \{0\}_{No(25)} = 97_{Prm}$$

$$LvN\ \{4\}_{No(17)} = 98,\ 98_{[2,\ 7,\ 7]\ SM=16},\ 16_{[2,\ 2,\ 2,\ 2]\ SM=8},\ 8_{[2,\ 2,\ 2]\ SM=6},\ 6_{[2,\ 3]\ SM=5},\ Sp = 5$$

$$LvN\{1\}_{No(22)} = 99, 99_{[3,3,11]\ SM=17}, Sp = 17$$

$$LvN\{4\}_{No(18)} = 100, 100_{[2,2,5,5]\ SM=14}, 14_{[2,7]\ SM=9}, 9_{[3,3]\ SM=6}, 6_{[2,3]\ SM=5}, Sp = 5$$

$$IN, [2, 100]$$

$$LCTaB(25_{\{0\}}, 22_1, 18_2, 11_3, 18_4, 4_5, 0, 0, 0)$$

$$LCTab(0, 0, 0, 0, 0, 0, 0, 0)$$

$$蛭子井博孝, [2, 1000], LEVEL\ NUMBER, "2024\text{-}02\text{-}22\text{-}(06:42:31\ AM)" \quad \textbf{(1)}$$

```
> print(蛭子井博孝, [2, 100], LEVEL NUMBER, FormatTime("%Y-%m-%d-(%r")) :for hj
  from 1 to 20 do LC||hj := 0 : LH||hj := { } :od: c := 0 :for h from 2 to 100 do if h = 4
  then lh||h := Lv(無限大) fi:if isprime(h) then c := c + 1 : L := 0 : lh||h := Lv(L)[Sp
  = h] else : n := h :for le from 1 to 20 do fs := 0 : ft := n : fp := 2 : nc := 0 :for p from 1
  to n/2 do if ft mod fp = 0 then nc := nc + 1 : ft := ft/fp : FT||nc := fp : fs := fs + fp
  else fp := nextprime(fp) fi:od: l||le := n : H||le := n[[seq((FT||j), j = 1 ..nc)]SM
  = fs] :if not isprime(fs) then n := fs else LC||le := LC||le + 1 : lh||h := Lv(le)[Sp
  = fs] :break if:od fi:if h mod 4 = 0 then print(seq([(h - 4 + j) = lh||(h - 4 + j)], j = 1
  ..4))fi:if h mod 100 = 0 then if le ≤ 5 then print( ) : print(LvN{le}[No(LC||le)] = h,
  seq(H||j, j = 1 ..4)[下につづく]) : print(l||5, seq(H||j, j = 5 .. le), Sp = fs)
  else print( ) : print(LvN{le}[No(LC||le)] = h, seq(H||j, j = 1 ..le), Sp = fs) fi :
  print([2, h]) : print(LCTaB(c[{0}], seq((LC||j)[j], j = 1 ..15))) : print( )fi:od :
  print(蛭子井博孝, [2, 100], LEVEL NUMBER, FormatTime("%Y-%m-%d-(%r")) :
```

$$蛭子井博孝, [2, 100], LEVEL\ NUMBER, "2024\text{-}02\text{-}22\text{-}(06:58:45\ AM)"$$

$$[1 = lh1], [2 = Lv(0)_{Sp=2}], [3 = Lv(0)_{Sp=3}], [4 = Lv(無限大)]$$

$$[5 = Lv(0)_{Sp=5}], [6 = Lv(1)_{Sp=5}], [7 = Lv(0)_{Sp=7}], [8 = Lv(2)_{Sp=5}]$$

$$[9 = Lv(2)_{Sp=5}], [10 = Lv(1)_{Sp=7}], [11 = Lv(0)_{Sp=11}], [12 = Lv(1)_{Sp=7}]$$

$$[13 = Lv(0)_{Sp=13}], [14 = Lv(3)_{Sp=5}], [15 = Lv(3)_{Sp=5}], [16 = Lv(3)_{Sp=5}]$$

$$[17 = Lv(0)_{Sp=17}], [18 = Lv(3)_{Sp=5}], [19 = Lv(0)_{Sp=19}], [20 = Lv(3)_{Sp=5}]$$

$$[21 = Lv(2)_{Sp=7}], [22 = Lv(1)_{Sp=13}], [23 = Lv(0)_{Sp=23}], [24 = Lv(3)_{Sp=5}]$$

$$[25 = Lv(2)_{Sp=7}], [26 = Lv(4)_{Sp=5}], [27 = Lv(3)_{Sp=5}], [28 = Lv(1)_{Sp=11}]$$

$$[29 = Lv(0)_{Sp=29}], [30 = Lv(2)_{Sp=7}], [31 = Lv(0)_{Sp=31}], [32 = Lv(2)_{Sp=7}]$$

$$[33 = Lv(4)_{Sp=5}], [34 = Lv(1)_{Sp=19}], [35 = Lv(2)_{Sp=7}], [36 = Lv(2)_{Sp=7}]$$

$$[37 = Lv(0)_{Sp=37}], [38 = Lv(3)_{Sp=7}], [39 = Lv(4)_{Sp=5}], [40 = Lv(1)_{Sp=11}]$$

$$[41 = Lv(0)_{Sp=41}], [42 = Lv(2)_{Sp=7}], [43 = Lv(0)_{Sp=43}], [44 = Lv(4)_{Sp=5}]$$

$$[45 = Lv(1)_{Sp=11}], [46 = Lv(3)_{Sp=7}], [47 = Lv(0)_{Sp=47}], [48 = Lv(1)_{Sp=11}]$$

$$[49 = Lv(4)_{Sp=5}], [50 = Lv(2)_{Sp=7}], [51 = Lv(4)_{Sp=5}], [52 = Lv(1)_{Sp=17}]$$

$$[53 = Lv(0)_{Sp=53}], [54 = Lv(1)_{Sp=11}], [55 = Lv(4)_{Sp=5}], [56 = Lv(1)_{Sp=13}]$$

$$[57 = Lv(2)_{Sp=13}], [58 = Lv(1)_{Sp=31}], [59 = Lv(0)_{Sp=59}], [60 = Lv(2)_{Sp=7}]$$
$$[61 = Lv(0)_{Sp=61}], [62 = Lv(5)_{Sp=5}], [63 = Lv(1)_{Sp=13}], [64 = Lv(2)_{Sp=7}]$$
$$[65 = Lv(4)_{Sp=5}], [66 = Lv(4)_{Sp=5}], [67 = Lv(0)_{Sp=67}], [68 = Lv(3)_{Sp=7}]$$
$$[69 = Lv(5)_{Sp=5}], [70 = Lv(4)_{Sp=5}], [71 = Lv(0)_{Sp=71}], [72 = Lv(2)_{Sp=7}]$$
$$[73 = Lv(0)_{Sp=73}], [74 = Lv(5)_{Sp=5}], [75 = Lv(1)_{Sp=13}], [76 = Lv(1)_{Sp=23}]$$
$$[77 = Lv(4)_{Sp=5}], [78 = Lv(4)_{Sp=5}], [79 = Lv(0)_{Sp=79}], [80 = Lv(1)_{Sp=13}]$$
$$[81 = Lv(2)_{Sp=7}], [82 = Lv(1)_{Sp=43}], [83 = Lv(0)_{Sp=83}], [84 = Lv(4)_{Sp=5}]$$
$$[85 = Lv(2)_{Sp=13}], [86 = Lv(2)_{Sp=11}], [87 = Lv(3)_{Sp=7}], [88 = Lv(1)_{Sp=17}]$$
$$[89 = Lv(0)_{Sp=89}], [90 = Lv(1)_{Sp=13}], [91 = Lv(4)_{Sp=5}], [92 = Lv(4)_{Sp=5}]$$
$$[93 = Lv(2)_{Sp=19}], [94 = Lv(5)_{Sp=5}], [95 = Lv(4)_{Sp=5}], [96 = Lv(1)_{Sp=13}]$$
$$[97 = Lv(0)_{Sp=97}], [98 = Lv(4)_{Sp=5}], [99 = Lv(1)_{Sp=17}], [100 = Lv(4)_{Sp=5}]$$

$$LvN\{4\}_{No(18)} = 100, (100_{[2,2,5,5]\ SM=14}, 14_{[2,7]\ SM=9}, 9_{[3,3]\ SM=6}, 6_{[2,3]\ SM=5})$$ 下につづく

$$6, Sp = 5$$

$$[2, 100]$$

$$LCTaB(25_{\{0\}}, 22_1, 18_2, 11_3, 18_4, 4_5, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)$$

蛭子井博孝, [2, 100], LEVEL NUMBER, "2024-02-22-(06:58:46 AM)" **(2)**

```
> print(蛭子井博孝, [2, 100], LEVEL NUMBER, FormatTime("%Y-%m-%d-(%r"))
  :for hj from 1 to 20 do LC||hj := 0 : LH||hj := { } :od: c := 0 :for h from 2 to 100 do if h = 4
  then lh||h := Lv(無限大) fi:if isprime(h) then c := c + 1 : L := 0 : lh||h := Lv(L)[Sp
  = h] else : n := h :for le from 1 to 20 do fs := 0 : ft := n : fp := 2 : nc := 0 :for p from 1
  to n/2 do if ft mod fp = 0 then nc := nc + 1 : ft := ft/fp : FT||nc := fp : fs := fs + fp
  else fp := nextprime(fp) fi:od: l||le := n : H||le := n[[seq((FT||j), j = 1 ..nc)]SM
  = fs] :if not isprime(fs) then n := fs else LC||le := LC||le + 1 : : LH||le := LH||le
  union {{h[LC||le], Sp = fs}} : break if:od fi:if h mod 100 = 0 then print([2, h]) :
  print(LCTaB(c[{0}], seq((LC||j)[j], j = 1 ..15))) : print( )fi:od :for lhv from 1 to 10
  do print(LVN(lhv), TotalCount(LC||lhv)) :for nh from 1 to floor((LC||lhv)/4)
  do print(seq((LH||lhv)[(nh − 1) · 4 + j], j = 1 ..4)) :od: print(seq((LH||lhv)[j], j = 4
  · floor((LC||lhv)/4) + 1 ..LC||lhv)) :od: print(蛭子井博孝, [2, 100],
  LEVEL NUMBER, FormatTime("%Y-%m-%d-(%r")) :
```

蛭子井博孝, [2, 100], LEVEL NUMBER, "2024-02-22-(06:50:52 AM)"

$$[2, 100]$$

$$LCTaB(25_{\{0\}}, 22_1, 18_2, 11_3, 18_4, 4_5, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)$$

$$LVN(1), TotalCount(22)$$
$$\{6_1, Sp=5\}, \{10_2, Sp=7\}, \{12_3, Sp=7\}, \{22_4, Sp=13\}$$
$$\{28_5, Sp=11\}, \{34_6, Sp=19\}, \{40_7, Sp=11\}, \{45_8, Sp=11\}$$
$$\{48_9, Sp=11\}, \{52_{10}, Sp=17\}, \{54_{11}, Sp=11\}, \{56_{12}, Sp=13\}$$
$$\{58_{13}, Sp=31\}, \{63_{14}, Sp=13\}, \{75_{15}, Sp=13\}, \{76_{16}, Sp=23\}$$
$$\{80_{17}, Sp=13\}, \{82_{18}, Sp=43\}, \{88_{19}, Sp=17\}, \{90_{20}, Sp=13\}$$
$$\{96_{21}, Sp=13\}, \{99_{22}, Sp=17\}$$
$$LVN(2), TotalCount(18)$$
$$\{8_1, Sp=5\}, \{9_2, Sp=5\}, \{21_3, Sp=7\}, \{25_4, Sp=7\}$$
$$\{30_5, Sp=7\}, \{32_6, Sp=7\}, \{35_7, Sp=7\}, \{36_8, Sp=7\}$$
$$\{42_9, Sp=7\}, \{50_{10}, Sp=7\}, \{57_{11}, Sp=13\}, \{60_{12}, Sp=7\}$$
$$\{64_{13}, Sp=7\}, \{72_{14}, Sp=7\}, \{81_{15}, Sp=7\}, \{85_{16}, Sp=13\}$$
$$\{86_{17}, Sp=11\}, \{93_{18}, Sp=19\}$$
$$LVN(3), TotalCount(11)$$
$$\{14_1, Sp=5\}, \{15_2, Sp=5\}, \{16_3, Sp=5\}, \{18_4, Sp=5\}$$
$$\{20_5, Sp=5\}, \{24_6, Sp=5\}, \{27_7, Sp=5\}, \{38_8, Sp=7\}$$
$$\{46_9, Sp=7\}, \{68_{10}, Sp=7\}, \{87_{11}, Sp=7\}$$
$$LVN(4), TotalCount(18)$$
$$\{26_1, Sp=5\}, \{33_2, Sp=5\}, \{39_3, Sp=5\}, \{44_4, Sp=5\}$$
$$\{49_5, Sp=5\}, \{51_6, Sp=5\}, \{55_7, Sp=5\}, \{65_8, Sp=5\}$$
$$\{66_9, Sp=5\}, \{70_{10}, Sp=5\}, \{77_{11}, Sp=5\}, \{78_{12}, Sp=5\}$$
$$\{84_{13}, Sp=5\}, \{91_{14}, Sp=5\}, \{92_{15}, Sp=5\}, \{95_{16}, Sp=5\}$$
$$\{98_{17}, Sp=5\}, \{100_{18}, Sp=5\}$$
$$LVN(5), TotalCount(4)$$
$$\{62_1, Sp=5\}, \{69_2, Sp=5\}, \{74_3, Sp=5\}, \{94_4, Sp=5\}$$

$$LVN(6), TotalCount(0)$$

$$LVN(7), TotalCount(0)$$

$$LVN(8), TotalCount(0)$$

$$LVN(9), TotalCount(0)$$

$$LVN(10), TotalCount(0)$$

```
> # LEVEL 10MAN by H.E:
> # LEVEL NUMBER by H.E:'23-1-9,1-14 ,-16,-17 RV:
> with(StringTools):
> print(蛭子井博孝,[2, 10000], LEVEL NUMBER", FormatTime("%Y-%m-%d-(%r)")):
  for hj from 1 to 10 do LC||hj := 0 :od: sc := 0 : H := 2 : c := 0 :for h from 2 to 10000
  do c := c + 1 : if not isprime(h) then n := h :for le from 1 to 10 do fs := 0 : ft := n :
  fp := 2 : nc := 0 :for p from 1 to n/2 do if ft mod fp = 0 then nc := nc + 1 : ft := ft/fp : FT
  ||le||nc := fp : fnc||le := nc : fs := fs + fp : FS||le := fs else fp := nextprime( fp) fi:od:
  if not isprime( fs) then n := fs else FS||le := fs : LC||le := LC||le + 1 :if LC||le ≤ 5
  or LC||le mod 250 = 0 then print(h[(LV{le})][Cno[LC||le]], Fac[seq(FT||1||j, j
  = 1 ..fnc||1)Sum = (FS||1)[Lv[le − 1]]]], LVsqN(seq((FS||j)[Lv[le − j]], j = 1 ..le))
  )fi:break if:od :if le = 11 and h = 4 then print(h[LV(infinity)])fi else sc := sc + 1 :
  if sc ≤ 7 or sc mod 250 = 0 then print(h[LV[{0}[No{sc}]]]) fi:fi :od: print(): print
  (IN,[2, h], TotalC = c, FormatTime("TWA-%d-(%r)")): print(LCTaB(sc[{0}],
  seq((LC||j)[j], j = 1 ..10))) : print(): print()
```

蛭子井博孝, [2, 10000], LEVEL NUMBER", "2023-01-18-(12:10:19 AM)"

$$2_{LV_{\{0\}\,No\{1\}}}$$

$$3_{LV_{\{0\}\,No\{2\}}}$$

$$4_{LV(\infty)}$$

$$5_{LV_{\{0\}\,No\{3\}}}$$

$$6_{(LV\{1\})_{Cno_1}, Fac_{(2,\,3)\ Sum=5_{Lv_0}}}, LVsqN\left(5_{Lv_0}\right)$$

$$7_{LV_{\{0\}\,No\{4\}}}$$

$$8_{(LV\{2\})_{Cno_1}, Fac_{(2,\,2,\,2)\ Sum=6_{Lv_1}}}, LVsqN\left(6_{Lv_1}, 5_{Lv_0}\right)$$

$$9_{(LV\{2\})_{Cno_2}, Fac_{(3,\,3)\ Sum=6_{Lv_1}}}, LVsqN\left(6_{Lv_1}, 5_{Lv_0}\right)$$

$$10_{(LV\{1\})_{Cno_2}, Fac_{(2,\,5)\ Sum=7_{Lv_0}}}, LVsqN\left(7_{Lv_0}\right)$$

$$11_{LV_{\{0\}\,No\{5\}}}$$

$$12_{(LV\{1\})Cno_3,\ Fac_{(2,\ 2,\ 3)\ Sum=7_{Lv_0}}},\ LVsqN\left(7_{Lv_0}\right)$$

$$13_{LV_{\{0\}}No\{6\}}$$

$$14_{(LV\{3\})Cno_1,\ Fac_{(2,\ 7)\ Sum=9_{Lv_2}}},\ LVsqN\left(9_{Lv_2},\ 6_{Lv_1},\ 5_{Lv_0}\right)$$

$$15_{(LV\{3\})Cno_2,\ Fac_{(3,\ 5)\ Sum=8_{Lv_2}}},\ LVsqN\left(8_{Lv_2},\ 6_{Lv_1},\ 5_{Lv_0}\right)$$

$$16_{(LV\{3\})Cno_3,\ Fac_{(2,\ 2,\ 2,\ 2)\ Sum=8_{Lv_2}}},\ LVsqN\left(8_{Lv_2},\ 6_{Lv_1},\ 5_{Lv_0}\right)$$

$$17_{LV_{\{0\}}No\{7\}}$$

$$18_{(LV\{3\})Cno_4,\ Fac_{(2,\ 3,\ 3)\ Sum=8_{Lv_2}}},\ LVsqN\left(8_{Lv_2},\ 6_{Lv_1},\ 5_{Lv_0}\right)$$

$$20_{(LV\{3\})Cno_5,\ Fac_{(2,\ 2,\ 5)\ Sum=9_{Lv_2}}},\ LVsqN\left(9_{Lv_2},\ 6_{Lv_1},\ 5_{Lv_0}\right)$$

$$21_{(LV\{2\})Cno_3,\ Fac_{(3,\ 7)\ Sum=10_{Lv_1}}},\ LVsqN\left(10_{Lv_1},\ 7_{Lv_0}\right)$$

$$22_{(LV\{1\})Cno_4,\ Fac_{(2,\ 11)\ Sum=13_{Lv_0}}},\ LVsqN\left(13_{Lv_0}\right)$$

$$25_{(LV\{2\})Cno_4,\ Fac_{(5,\ 5)\ Sum=10_{Lv_1}}},\ LVsqN\left(10_{Lv_1},\ 7_{Lv_0}\right)$$

$$26_{(LV\{4\})Cno_1,\ Fac_{(2,\ 13)\ Sum=15_{Lv_3}}},\ LVsqN\left(15_{Lv_3},\ 8_{Lv_2},\ 6_{Lv_1},\ 5_{Lv_0}\right)$$

$$28_{(LV\{1\})Cno_5,\ Fac_{(2,\ 2,\ 7)\ Sum=11_{Lv_0}}},\ LVsqN\left(11_{Lv_0}\right)$$

$$30_{(LV\{2\})Cno_5,\ Fac_{(2,\ 3,\ 5)\ Sum=10_{Lv_1}}},\ LVsqN\left(10_{Lv_1},\ 7_{Lv_0}\right)$$

$$33_{(LV\{4\})Cno_2,\ Fac_{(3,\ 11)\ Sum=14_{Lv_3}}},\ LVsqN\left(14_{Lv_3},\ 9_{Lv_2},\ 6_{Lv_1},\ 5_{Lv_0}\right)$$

$$39_{(LV\{4\})Cno_3,\ Fac_{(3,\ 13)\ Sum=16_{Lv_3}}},\ LVsqN\left(16_{Lv_3},\ 8_{Lv_2},\ 6_{Lv_1},\ 5_{Lv_0}\right)$$

$$44_{(LV\{4\})Cno_4,\ Fac_{(2,\ 2,\ 11)\ Sum=15_{Lv_3}}},\ LVsqN\left(15_{Lv_3},\ 8_{Lv_2},\ 6_{Lv_1},\ 5_{Lv_0}\right)$$

$$49_{(LV\{4\})Cno_5},\ Fac_{(7,\ 7)\ Sum=14_{Lv_3}},\ LVsqN\left(14_{Lv_3}, 9_{Lv_2}, 6_{Lv_1}, 5_{Lv_0}\right)$$

$$62_{(LV\{5\})Cno_1},\ Fac_{(2,\ 31)\ Sum=33_{Lv_4}},\ LVsqN\left(33_{Lv_4}, 14_{Lv_3}, 9_{Lv_2}, 6_{Lv_1}, 5_{Lv_0}\right)$$

$$69_{(LV\{5\})Cno_2},\ Fac_{(3,\ 23)\ Sum=26_{Lv_4}},\ LVsqN\left(26_{Lv_4}, 15_{Lv_3}, 8_{Lv_2}, 6_{Lv_1}, 5_{Lv_0}\right)$$

$$74_{(LV\{5\})Cno_3},\ Fac_{(2,\ 37)\ Sum=39_{Lv_4}},\ LVsqN\left(39_{Lv_4}, 16_{Lv_3}, 8_{Lv_2}, 6_{Lv_1}, 5_{Lv_0}\right)$$

$$94_{(LV\{5\})Cno_4},\ Fac_{(2,\ 47)\ Sum=49_{Lv_4}},\ LVsqN\left(49_{Lv_4}, 14_{Lv_3}, 9_{Lv_2}, 6_{Lv_1}, 5_{Lv_0}\right)$$

$$106_{(LV\{5\})Cno_5},\ Fac_{(2,\ 53)\ Sum=55_{Lv_4}},\ LVsqN\left(55_{Lv_4}, 16_{Lv_3}, 8_{Lv_2}, 6_{Lv_1}, 5_{Lv_0}\right)$$

$$134_{(LV\{6\})Cno_1},\ Fac_{(2,\ 67)\ Sum=69_{Lv_5}},\ LVsqN\left(69_{Lv_5}, 26_{Lv_4}, 15_{Lv_3}, 8_{Lv_2}, 6_{Lv_1}, 5_{Lv_0}\right)$$

$$177_{(LV\{6\})Cno_2},\ Fac_{(3,\ 59)\ Sum=62_{Lv_5}},\ LVsqN\left(62_{Lv_5}, 33_{Lv_4}, 14_{Lv_3}, 9_{Lv_2}, 6_{Lv_1}, 5_{Lv_0}\right)$$

$$213_{(LV\{6\})Cno_3},\ Fac_{(3,\ 71)\ Sum=74_{Lv_5}},\ LVsqN\left(74_{Lv_5}, 39_{Lv_4}, 16_{Lv_3}, 8_{Lv_2}, 6_{Lv_1}, 5_{Lv_0}\right)$$

$$262_{(LV\{6\})Cno_4},\ Fac_{(2,\ 131)\ Sum=133_{Lv_5}},\ LVsqN\left(133_{Lv_5}, 26_{Lv_4}, 15_{Lv_3}, 8_{Lv_2}, 6_{Lv_1}, 5_{Lv_0}\right)$$

$$309_{(LV\{6\})Cno_5},\ Fac_{(3,\ 103)\ Sum=106_{Lv_5}},\ LVsqN\left(106_{Lv_5}, 55_{Lv_4}, 16_{Lv_3}, 8_{Lv_2}, 6_{Lv_1}, 5_{Lv_0}\right)$$

$$393_{(LV\{7\})Cno_1},\ Fac_{(3,\ 131)\ Sum=134_{Lv_6}},\ LVsqN\left(134_{Lv_6}, 69_{Lv_5}, 26_{Lv_4}, 15_{Lv_3}, 8_{Lv_2}, 6_{Lv_1}, 5_{Lv_0}\right)$$

$$422_{(LV\{7\})Cno_2},\ Fac_{(2,\ 211)\ Sum=213_{Lv_6}},\ LVsqN\left(213_{Lv_6}, 74_{Lv_5}, 39_{Lv_4}, 16_{Lv_3}, 8_{Lv_2}, 6_{Lv_1}, 5_{Lv_0}\right)$$

$$614_{(LV\{7\})Cno_3},\ Fac_{(2,\ 307)\ Sum=309_{Lv_6}},\ LVsqN\left(309_{Lv_6}, 106_{Lv_5}, 55_{Lv_4}, 16_{Lv_3}, 8_{Lv_2}, 6_{Lv_1}, 5_{Lv_0}\right)$$

$$674_{(LV\{7\})Cno_4},\ Fac_{(2,\ 337)\ Sum=339_{Lv_6}},\ LVsqN\left(339_{Lv_6}, 116_{Lv_5}, 33_{Lv_4}, 14_{Lv_3}, 9_{Lv_2}, 6_{Lv_1}, 5_{Lv_0}\right)$$

$$692_{(LV\{7\})Cno_5},\ Fac_{(2,\ 2,\ 173)\ Sum=177_{Lv_6}},\ LVsqN\left(177_{Lv_6}, 62_{Lv_5}, 33_{Lv_4}, 14_{Lv_3}, 9_{Lv_2}, 6_{Lv_1}, 5_{Lv_0}\right)$$

$$1257_{(LV\{8\})Cno_1},\ Fac_{(3,\ 419)\ Sum=422_{Lv_7}},\ LVsqN\left(422_{Lv_7}, 213_{Lv_6}, 74_{Lv_5}, 39_{Lv_4}, 16_{Lv_3}, 8_{Lv_2}, 6_{Lv_1},\right.$$

$5_{Lv_0}\Big)$

$$1465_{(LV\{2\})_{Cno_{250}}}, Fac_{(5,\ 293)\ Sum=298_{Lv_1}}, LVsqN\left(298_{Lv_1}, 151_{Lv_0}\right)$$

$$1556_{(LV\{8\})_{Cno_2}}, Fac_{(2,\ 2,\ 389)\ Sum=393_{Lv_7}}, LVsqN\left(393_{Lv_7}, 134_{Lv_6}, 69_{Lv_5}, 26_{Lv_4}, 15_{Lv_3}, 8_{Lv_2}, 6_{Lv_1},\right.$$

$5_{Lv_0}\Big)$

$$1575_{(LV\{1\})_{Cno_{250}}}, Fac_{(3,\ 3,\ 5,\ 5,\ 7)\ Sum=23_{Lv_0}}, LVsqN\left(23_{Lv_0}\right)$$

$$1583_{LV_{\{0\}_{No\{250\}}}}$$

$$1603_{(LV\{3\})_{Cno_{250}}}, Fac_{(7,\ 229)\ Sum=236_{Lv_2}}, LVsqN\left(236_{Lv_2}, 63_{Lv_1}, 13_{Lv_0}\right)$$

$$1631_{(LV\{5\})_{Cno_{250}}}, Fac_{(7,\ 233)\ Sum=240_{Lv_4}}, LVsqN\left(240_{Lv_4}, 16_{Lv_3}, 8_{Lv_2}, 6_{Lv_1}, 5_{Lv_0}\right)$$

$$1774_{(LV\{8\})_{Cno_3}}, Fac_{(2,\ 887)\ Sum=889_{Lv_7}}, LVsqN\left(889_{Lv_7}, 134_{Lv_6}, 69_{Lv_5}, 26_{Lv_4}, 15_{Lv_3}, 8_{Lv_2}, 6_{Lv_1},\right.$$

$5_{Lv_0}\Big)$

$$1894_{(LV\{4\})_{Cno_{250}}}, Fac_{(2,\ 947)\ Sum=949_{Lv_3}}, LVsqN\left(949_{Lv_3}, 86_{Lv_2}, 45_{Lv_1}, 11_{Lv_0}\right)$$

$$1982_{(LV\{8\})_{Cno_4}}, Fac_{(2,\ 991)\ Sum=993_{Lv_7}}, LVsqN\left(993_{Lv_7}, 334_{Lv_6}, 169_{Lv_5}, 26_{Lv_4}, 15_{Lv_3}, 8_{Lv_2}, 6_{Lv_1},\right.$$

$5_{Lv_0}\Big)$

$$2566_{(LV\{8\})_{Cno_5}}, Fac_{(2,\ 1283)\ Sum=1285_{Lv_7}}, LVsqN\left(1285_{Lv_7}, 262_{Lv_6}, 133_{Lv_5}, 26_{Lv_4}, 15_{Lv_3}, 8_{Lv_2}, 6_{Lv_1},\right.$$

$5_{Lv_0}\Big)$

$$2823_{(LV\{2\})_{Cno_{500}}}, Fac_{(3,\ 941)\ Sum=944_{Lv_1}}, LVsqN\left(944_{Lv_1}, 67_{Lv_0}\right)$$

$$2958_{(LV\{5\})_{Cno_{500}}}, Fac_{(2,\ 3,\ 17,\ 29)\ Sum=51_{Lv_4}}, LVsqN\left(51_{Lv_4}, 20_{Lv_3}, 9_{Lv_2}, 6_{Lv_1}, 5_{Lv_0}\right)$$

$$3116_{(LV\{3\})_{Cno_{500}}}, Fac_{(2,\ 2,\ 19,\ 41)\ Sum=64_{Lv_2}}, LVsqN\left(64_{Lv_2}, 12_{Lv_1}, 7_{Lv_0}\right)$$

$$3328_{(LV\{1\})Cno_{500}},\ Fac_{(2,\ 2,\ 2,\ 2,\ 2,\ 2,\ 2,\ 13)\ Sum=29_{Lv_0}},\ LVsqN\left(29_{Lv_0}\right)$$

$$3571_{LV_{\{0\}}No\{500\}}$$

$$3841_{(LV\{6\})Cno_{250}},\ Fac_{(23,\ 167)\ Sum=190_{Lv_5}},\ LVsqN\left(190_{Lv_5},\ 26_{Lv_4},\ 15_{Lv_3},\ 8_{Lv_2},\ 6_{Lv_1},\ 5_{Lv_0}\right)$$

$$4164_{(LV\{4\})Cno_{500}},\ Fac_{(2,\ 2,\ 3,\ 347)\ Sum=354_{Lv_3}},\ LVsqN\left(354_{Lv_3},\ 64_{Lv_2},\ 12_{Lv_1},\ 7_{Lv_0}\right)$$

$$4199_{(LV\{5\})Cno_{750}},\ Fac_{(13,\ 17,\ 19)\ Sum=49_{Lv_4}},\ LVsqN\left(49_{Lv_4},\ 14_{Lv_3},\ 9_{Lv_2},\ 6_{Lv_1},\ 5_{Lv_0}\right)$$

$$4334_{(LV\{2\})Cno_{750}},\ Fac_{(2,\ 11,\ 197)\ Sum=210_{Lv_1}},\ LVsqN\left(210_{Lv_1},\ 17_{Lv_0}\right)$$

$$4659_{(LV\{9\})Cno_1},\ Fac_{(3,\ 1553)\ Sum=1556_{Lv_8}},\ LVsqN\left(1556_{Lv_8},\ 393_{Lv_7},\ 134_{Lv_6},\ 69_{Lv_5},\ 26_{Lv_4},\ 15_{Lv_3},\ 8_{Lv_2},\ 6_{Lv_1},\ 5_{Lv_0}\right)$$

$$4661_{(LV\{3\})Cno_{750}},\ Fac_{(59,\ 79)\ Sum=138_{Lv_2}},\ LVsqN\left(138_{Lv_2},\ 28_{Lv_1},\ 11_{Lv_0}\right)$$

$$5291_{(LV\{1\})Cno_{750}},\ Fac_{(11,\ 13,\ 37)\ Sum=61_{Lv_0}},\ LVsqN\left(61_{Lv_0}\right)$$

$$5294_{(LV\{9\})Cno_2},\ Fac_{(2,\ 2647)\ Sum=2649_{Lv_8}},\ LVsqN\left(2649_{Lv_8},\ 886_{Lv_7},\ 445_{Lv_6},\ 94_{Lv_5},\ 49_{Lv_4},\ 14_{Lv_3},\ 9_{Lv_2},\ 6_{Lv_1},\ 5_{Lv_0}\right)$$

$$5476_{(LV\{5\})Cno_{1000}},\ Fac_{(2,\ 2,\ 37,\ 37)\ Sum=78_{Lv_4}},\ LVsqN\left(78_{Lv_4},\ 18_{Lv_3},\ 8_{Lv_2},\ 6_{Lv_1},\ 5_{Lv_0}\right)$$

$$5693_{LV_{\{0\}}No\{750\}}$$

$$5920_{(LV\{2\})Cno_{1000}},\ Fac_{(2,\ 2,\ 2,\ 2,\ 2,\ 5,\ 37)\ Sum=52_{Lv_1}},\ LVsqN\left(52_{Lv_1},\ 17_{Lv_0}\right)$$

$$5937_{(LV\{9\})Cno_3},\ Fac_{(3,\ 1979)\ Sum=1982_{Lv_8}},\ LVsqN\left(1982_{Lv_8},\ 993_{Lv_7},\ 334_{Lv_6},\ 169_{Lv_5},\ 26_{Lv_4},\ 15_{Lv_3},\ 8_{Lv_2},\ 6_{Lv_1},\ 5_{Lv_0}\right)$$

$$6166_{(LV\{3\})Cno_{1000}},\ Fac_{(2,\ 3083)\ Sum=3085_{Lv_2}},\ LVsqN\left(3085_{Lv_2},\ 622_{Lv_1},\ 313_{Lv_0}\right)$$

$$6312_{(LV\{4\})Cno_{750}},\ Fac_{(2,\ 2,\ 2,\ 3,\ 263)\ Sum=272_{Lv_3}},\ LVsqN\left(272_{Lv_3}, 25_{Lv_2}, 10_{Lv_1}, 7_{Lv_0}\right)$$

$$6395_{(LV\{6\})Cno_{500}},\ Fac_{(5,\ 1279)\ Sum=1284_{Lv_5}},\ LVsqN\left(1284_{Lv_5}, 114_{Lv_4}, 24_{Lv_3}, 9_{Lv_2}, 6_{Lv_1}, 5_{Lv_0}\right)$$

$$6755_{(LV\{5\})Cno_{1250}},\ Fac_{(5,\ 7,\ 193)\ Sum=205_{Lv_4}},\ LVsqN\left(205_{Lv_4}, 46_{Lv_3}, 25_{Lv_2}, 10_{Lv_1}, 7_{Lv_0}\right)$$

$$7132_{(LV\{1\})Cno_{1000}},\ Fac_{(2,\ 2,\ 1783)\ Sum=1787_{Lv_0}},\ LVsqN\left(1787_{Lv_0}\right)$$

$$7462_{(LV\{2\})Cno_{1250}},\ Fac_{(2,\ 7,\ 13,\ 41)\ Sum=63_{Lv_1}},\ LVsqN\left(63_{Lv_1}, 13_{Lv_0}\right)$$

$$7919_{LV_{\{0\}}No\{1000\}}$$

$$7920_{(LV\{3\})Cno_{1250}},\ Fac_{(2,\ 2,\ 2,\ 2,\ 3,\ 3,\ 5,\ 11)\ Sum=30_{Lv_2}},\ LVsqN\left(30_{Lv_2}, 10_{Lv_1}, 7_{Lv_0}\right)$$

$$8125_{(LV\{5\})Cno_{1500}},\ Fac_{(5,\ 5,\ 5,\ 5,\ 13)\ Sum=33_{Lv_4}},\ LVsqN\left(33_{Lv_4}, 14_{Lv_3}, 9_{Lv_2}, 6_{Lv_1}, 5_{Lv_0}\right)$$

$$8579_{(LV\{4\})Cno_{1000}},\ Fac_{(23,\ 373)\ Sum=396_{Lv_3}},\ LVsqN\left(396_{Lv_3}, 21_{Lv_2}, 10_{Lv_1}, 7_{Lv_0}\right)$$

$$8705_{(LV\{6\})Cno_{750}},\ Fac_{(5,\ 1741)\ Sum=1746_{Lv_5}},\ LVsqN\left(1746_{Lv_5}, 105_{Lv_4}, 15_{Lv_3}, 8_{Lv_2}, 6_{Lv_1}, 5_{Lv_0}\right)$$

$$8957_{(LV\{1\})Cno_{1250}},\ Fac_{(13,\ 13,\ 53)\ Sum=79_{Lv_0}},\ LVsqN\left(79_{Lv_0}\right)$$

$$8993_{(LV\{2\})Cno_{1500}},\ Fac_{(17,\ 23,\ 23)\ Sum=63_{Lv_1}},\ LVsqN\left(63_{Lv_1}, 13_{Lv_0}\right)$$

$$9286_{(LV\{9\})Cno_4},\ Fac_{(2,\ 4643)\ Sum=4645_{Lv_8}},\ LVsqN\left(4645_{Lv_8}, 934_{Lv_7}, 469_{Lv_6}, 74_{Lv_5}, 39_{Lv_4}, 16_{Lv_3}, 8_{Lv_2}, 6_{Lv_1}, 5_{Lv_0}\right)$$

$$9314_{(LV\{10\})Cno_1},\ Fac_{(2,\ 4657)\ Sum=4659_{Lv_9}},\ LVsqN\left(4659_{Lv_9}, 1556_{Lv_8}, 393_{Lv_7}, 134_{Lv_6}, 69_{Lv_5}, 26_{Lv_4}, 15_{Lv_3}, 8_{Lv_2}, 6_{Lv_1}, 5_{Lv_0}\right)$$

$$9570_{(LV\{3\})Cno_{1500}},\ Fac_{(2,\ 3,\ 5,\ 11,\ 29)\ Sum=50_{Lv_2}},\ LVsqN\left(50_{Lv_2}, 12_{Lv_1}, 7_{Lv_0}\right)$$

$$9644_{(LV\{5\})_{Cno_{1750}}}, Fac_{(2,\,2,\,2411)\,Sum=2415_{Lv_4}}, LVsqN\left(2415_{Lv_4}, 38_{Lv_3}, 21_{Lv_2}, 10_{Lv_1}, 7_{Lv_0}\right)$$

$$IN, [2, 10001], TotalC = 9999, \text{"TWA-18-(12:14:12 AM)"}$$

$$LCTaB\left(1229_{\{0\}}, 1388_1, 1659_2, 1573_3, 1181_4, 1807_5, 891_6, 226_7, 39_8, 4_9, 1_{10}\right)$$

(1)

$$IN, [1, 1000]$$

$$LCTaB\left(168_{\{0\}}, 170_1, 168_2, 152_3, 154_4, 142_5, 35_6, 9_7, 0\right)$$

$$LCTab(0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0) \quad \textbf{(2)}$$

$$IN, [1, 10000]$$

$$LCTaB\left(1229_{\{0\}}, 1388_1, 1659_2, 1573_3, 1181_4, 1807_5, 891_6, 226_7, 39_8\right)$$

$$LCTab\left(4_9, 1_{10}, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0\right) \quad \textbf{(3)}$$

(4)

$$GRPNs(Hirotaka \cdot E) = 100$$

$$[2, 100000], TotalC = 99999, \text{"TWA-17-(03:01:47 AM)"}$$

$$LCTaB\left(9592_{\{0\}}, 12285_1, 15207_2, 15236_3, 13439_4, 15314_5, 12628_6, 4890_7, 1179_8, 206_9, 20_{10}, 2_{11}, 0\right)$$

(5)

```
> # 33....331=prime by H.E '20-12-26:
> for d from 1 to 7 by 6 do c := d :for h from 1 to 331 do c := 3·10^h + c :if isprime(c)
      then print(c[{h + 1} 桁]=prime) fi :od:od:
                                31{2} 桁=prime
                               331{3} 桁=prime
                              3331{4} 桁=prime
                             33331{5} 桁=prime
                            333331{6} 桁=prime
                           3333331{7} 桁=prime
                          33333331{8} 桁=prime
                  333333333333333331{18} 桁=prime
  33333333333333333333333333333333331{40} 桁=prime
33333333333333333333333333333333333333331{50} 桁=prime
3333333333333333333333333333333333333333333333331{60} 桁=prime
333333333333333333333333333333333333333333333333333333333333333333333333333\
    3331{78} 桁=prime
333333333333333333333333333333333333333333333333333333333333333333333333333\
    33333333333333333333331{101} 桁=prime
333333333333333333333333333333333333333333333333333333333333333333333333333\
    333333333333333333333333333333333333333333333333333333333333333333333333\
    333331{151} 桁=prime
333333333333333333333333333333333333333333333333333333333333333333333333333\
    333333333333333333333333333333333333333333333333333333333333333333333333\
    333333333333333333333333333333333333333333333333333333333333333333333333\
    333333333333333333333333333333333333333333333333333333333333333333333333\
    33333333333333333333333331{319} 桁=prime
```

> # $\frac{1}{p}+\frac{1}{q}+\frac{1}{r}=\frac{1}{h}$ **by** $H\cdot E$ '2020 − 7 − 12, 13 *rv*:

わかりやすく書いたが、内容は、昨日のもの:

```
> with(StringTools):print(蛭子井博孝,単位分数恒等式,
  FormatTime("%Y-%m-%d-(%r)")):p:=X+1:q:=X^2+X+1:r:=X^4+2·X^3
  +2·X^2+X:print(1/p+1/q+1/r=simplify(1/p+1/q+1/r)):print():
  print(subs(X=1000,1/p)[。]+subs(X=1000,1/q)[。]+subs(X=1000,1/r)[。]
  =subs(X=1000,1/p+1/q+1/r)):print():for h from 1 to 10 do P:=subs(X=h,
  1/p):Q:=subs(X=h,1/q):R:=subs(X=h,1/r):print(P[。]+Q[。]+R[。]
  =P+Q+R):od:print(蛭子井博孝,FormatTime("%Y-%m-%d-(%r)"),DONE):
```

蛭子井博孝, 単位分数恒等式, "2020-07-13-(09:20:46 PM)"

$$\frac{1}{X+1}+\frac{1}{X^2+X+1}+\frac{1}{X^4+2X^3+2X^2+X}=\frac{1}{X}$$

$$\left(\frac{1}{1001}\right)_{。}+\left(\frac{1}{1001001}\right)_{。}+\left(\frac{1}{1002002001000}\right)_{。}=\frac{1}{1000}$$

$$\left(\frac{1}{2}\right)_{。}+\left(\frac{1}{3}\right)_{。}+\left(\frac{1}{6}\right)_{。}=1$$
$$\left(\frac{1}{3}\right)_{。}+\left(\frac{1}{7}\right)_{。}+\left(\frac{1}{42}\right)_{。}=\frac{1}{2}$$
$$\left(\frac{1}{4}\right)_{。}+\left(\frac{1}{13}\right)_{。}+\left(\frac{1}{156}\right)_{。}=\frac{1}{3}$$
$$\left(\frac{1}{5}\right)_{。}+\left(\frac{1}{21}\right)_{。}+\left(\frac{1}{420}\right)_{。}=\frac{1}{4}$$
$$\left(\frac{1}{6}\right)_{。}+\left(\frac{1}{31}\right)_{。}+\left(\frac{1}{930}\right)_{。}=\frac{1}{5}$$
$$\left(\frac{1}{7}\right)_{。}+\left(\frac{1}{43}\right)_{。}+\left(\frac{1}{1806}\right)_{。}=\frac{1}{6}$$
$$\left(\frac{1}{8}\right)_{。}+\left(\frac{1}{57}\right)_{。}+\left(\frac{1}{3192}\right)_{。}=\frac{1}{7}$$
$$\left(\frac{1}{9}\right)_{。}+\left(\frac{1}{73}\right)_{。}+\left(\frac{1}{5256}\right)_{。}=\frac{1}{8}$$
$$\left(\frac{1}{10}\right)_{。}+\left(\frac{1}{91}\right)_{。}+\left(\frac{1}{8190}\right)_{。}=\frac{1}{9}$$
$$\left(\frac{1}{11}\right)_{。}+\left(\frac{1}{111}\right)_{。}+\left(\frac{1}{12210}\right)_{。}=\frac{1}{10}$$

蛭子井博孝, "2020-07-13-(09:20:46 PM)", *DONE* **(1)**

>

>

```
> #(x-1)^h+x^h+(x+1)^h=X^h+Y^h+Z^h by H・E'22−3−19:
> with(StringTools):print(蛭子井博孝, 3 項ラマヌジャン数,
      FormatTime("%Y-%m-%d-(%r)")):
```

蛭子井博孝, 3 項ラマヌジャン数, "2022-04-13-(11:54:15 AM)" **(1)**

```
> print( ):print(H={2}次, 3 連続数ラマヌジャン数,
      FormatTime("%Y-%m-%d-(%r)")):h:=2:print( ):for x from 1 to 31 do A:=x
      −1:B:=x+1:hc:=0:for X from 1 to 99 do for Y from X+1 to 99 do for Z from Y
      +1 to 99 do if (x−1)^h+x^h+(x+1)^h=X^h+Y^h+Z^h and X≠x−1 and y≠x
      and Z≠x+1 then hc:=hc+1:print(H・E[hc]=[A[a]^h+x[b]^h+B[c]^h=X[a]^h
      +Y[b]^h+Z[c]^h]) if:if hc=2 then break if:od:if hc=2 then break if:od:if hc=2 then
      break if:od:od:
```

$H=\{2\}$ 次, 3 連続数ラマヌジャン数, "2022-04-13-(12:44:18 PM)"

$$H\cdot E_1=\left[4_a^2+5_b^2+6_c^2=2_a^2+3_b^2+8_c^2\right]$$
$$H\cdot E_1=\left[5_a^2+6_b^2+7_c^2=1_a^2+3_b^2+10_c^2\right]$$
$$H\cdot E_2=\left[5_a^2+6_b^2+7_c^2=2_a^2+5_b^2+9_c^2\right]$$
$$H\cdot E_1=\left[6_a^2+7_b^2+8_c^2=1_a^2+2_b^2+12_c^2\right]$$
$$H\cdot E_2=\left[6_a^2+7_b^2+8_c^2=2_a^2+8_b^2+9_c^2\right]$$
$$H\cdot E_1=\left[7_a^2+8_b^2+9_c^2=1_a^2+7_b^2+12_c^2\right]$$
$$H\cdot E_2=\left[7_a^2+8_b^2+9_c^2=3_a^2+4_b^2+13_c^2\right]$$
$$H\cdot E_1=\left[8_a^2+9_b^2+10_c^2=1_a^2+10_b^2+12_c^2\right]$$
$$H\cdot E_2=\left[8_a^2+9_b^2+10_c^2=2_a^2+4_b^2+15_c^2\right]$$
$$H\cdot E_1=\left[9_a^2+10_b^2+11_c^2=2_a^2+3_b^2+17_c^2\right]$$
$$H\cdot E_2=\left[9_a^2+10_b^2+11_c^2=5_a^2+9_b^2+14_c^2\right]$$
$$H\cdot E_1=\left[10_a^2+11_b^2+12_c^2=3_a^2+10_b^2+16_c^2\right]$$
$$H\cdot E_2=\left[10_a^2+11_b^2+12_c^2=4_a^2+5_b^2+18_c^2\right]$$
$$H\cdot E_1=\left[11_a^2+12_b^2+13_c^2=1_a^2+12_b^2+17_c^2\right]$$
$$H\cdot E_2=\left[11_a^2+12_b^2+13_c^2=3_a^2+5_b^2+20_c^2\right]$$
$$H\cdot E_1=\left[12_a^2+13_b^2+14_c^2=2_a^2+8_b^2+21_c^2\right]$$
$$H\cdot E_2=\left[12_a^2+13_b^2+14_c^2=2_a^2+12_b^2+19_c^2\right]$$
$$H\cdot E_1=\left[13_a^2+14_b^2+15_c^2=2_a^2+15_b^2+19_c^2\right]$$
$$H\cdot E_2=\left[13_a^2+14_b^2+15_c^2=5_a^2+6_b^2+23_c^2\right]$$
$$H\cdot E_1=\left[14_a^2+15_b^2+16_c^2=1_a^2+10_b^2+24_c^2\right]$$
$$H\cdot E_2=\left[14_a^2+15_b^2+16_c^2=2_a^2+12_b^2+23_c^2\right]$$
$$H\cdot E_1=\left[15_a^2+16_b^2+17_c^2=1_a^2+12_b^2+25_c^2\right]$$

```
> #x^h + y^h + z^h = X^h + Y^h + Z^h by H・E '22 − 3 − 19 :
> with(StringTools) : print(蛭子井博孝, 3 項ラマヌジャン数,
      FormatTime("%Y-%m-%d-(%r)")) :
```

蛭子井博孝, 3 項ラマヌジャン数, "2022-04-03-(12:07:27 AM)" **(1)**

```
> for h from 2 to 8 do hc := 0 : print( ) : print(H = {h}次, 3 項ラマヌジャン数,
  FormatTime("%Y-%m-%d-(%r)")) : print( ) : for x from 1 to 99 do for y from x + 1
  to 99 do for z from y + 1 to 99 do for X from 1 to x − 1 do for Y from y + 1 to z − 2
  do for Z from Y + 1 to z − 1 do if x^h + y^h + z^h = X^h + Y^h + Z^h then hc := hc + 1 : print
  (x[a]^h + y[b]^h + z[c]^h = X[a]^h + Y[b]^h + Z[c]^h) fi: if hc = 5 then break if:od: if hc = 5
  then break if:od:if hc = 5 then break if:od:if hc = 5 then break if:od:if hc = 5 then break
  if:od:if hc = 5 then break if:od:od:
```

$H = \{2\}$ 次, 3 項ラマヌジャン数, "2022-04-03-(12:07:28 AM)"

$$2_a^2 + 3_b^2 + 7_c^2 = 1_a^2 + 5_b^2 + 6_c^2$$
$$2_a^2 + 3_b^2 + 13_c^2 = 1_a^2 + 9_b^2 + 10_c^2$$
$$2_a^2 + 3_b^2 + 14_c^2 = 1_a^2 + 8_b^2 + 12_c^2$$
$$2_a^2 + 3_b^2 + 19_c^2 = 1_a^2 + 7_b^2 + 18_c^2$$
$$2_a^2 + 3_b^2 + 23_c^2 = 1_a^2 + 10_b^2 + 21_c^2$$

$H = \{3\}$ 次, 3 項ラマヌジャン数, "2022-04-03-(12:07:28 AM)"

$$2_a^3 + 4_b^3 + 24_c^3 = 1_a^3 + 12_b^3 + 23_c^3$$
$$2_a^3 + 7_b^3 + 24_c^3 = 1_a^3 + 17_b^3 + 21_c^3$$
$$2_a^3 + 7_b^3 + 55_c^3 = 1_a^3 + 21_b^3 + 54_c^3$$
$$2_a^3 + 7_b^3 + 61_c^3 = 1_a^3 + 28_b^3 + 59_c^3$$
$$2_a^3 + 9_b^3 + 37_c^3 = 1_a^3 + 29_b^3 + 30_c^3$$

$H = \{4\}$ 次, 3 項ラマヌジャン数, "2022-04-03-(12:07:28 AM)"

$$3_a^4 + 6_b^4 + 21_c^4 = 1_a^4 + 16_b^4 + 19_c^4$$
$$3_a^4 + 7_b^4 + 44_c^4 = 1_a^4 + 24_b^4 + 43_c^4$$
$$3_a^4 + 8_b^4 + 79_c^4 = 2_a^4 + 57_b^4 + 73_c^4$$
$$3_a^4 + 22_b^4 + 41_c^4 = 2_a^4 + 33_b^4 + 37_c^4$$
$$3_a^4 + 42_b^4 + 72_c^4 = 2_a^4 + 56_b^4 + 67_c^4$$

$H=\{5\}$ 次, 3 項ラマヌジャン数, "2022-04-03-(12:07:39 AM)"

$$18_a^5+44_b^5+66_c^5=13_a^5+51_b^5+64_c^5$$
$$21_a^5+43_b^5+74_c^5=8_a^5+62_b^5+68_c^5$$
$$24_a^5+28_b^5+67_c^5=3_a^5+54_b^5+62_c^5$$
$$56_a^5+67_b^5+83_c^5=53_a^5+72_b^5+81_c^5$$

$H=\{6\}$ 次, 3 項ラマヌジャン数, "2022-04-03-(12:32:27 AM)"

$$10_a^6+15_b^6+23_c^6=3_a^6+19_b^6+22_c^6$$
$$20_a^6+30_b^6+46_c^6=6_a^6+38_b^6+44_c^6$$
$$30_a^6+45_b^6+69_c^6=9_a^6+57_b^6+66_c^6$$
$$32_a^6+43_b^6+81_c^6=3_a^6+55_b^6+80_c^6$$
$$33_a^6+47_b^6+74_c^6=23_a^6+54_b^6+73_c^6$$

$H=\{7\}$ 次, 3 項ラマヌジャン数, "2022-04-03-(12:47:31 AM)"

$H=\{8\}$ 次, 3 項ラマヌジャン数, "2022-04-03-(01:15:05 AM)"

(2)

>

```
> # 1^1 + 2^2 + 3^3 + ... + h^h = prime by H . E :
> s := 0 :for h from 1 to 1000 do s := s + h^h :if isprime(s) then if h > 10 then se :=
    evalf(s) else se := s fi: print([1]^1., kara, [h]^h, made no, {h} ko no SUM = se[PRIME])
    fi :od: print(H = [h K 1]^(h K 1) madede) :
```

$$[1]^{1.}, kara, [2]^2, made\ no, \{2\}\ ko\ no\ SUM = 5_{PRIME}$$
$$[1]^{1.}, kara, [5]^5, made\ no, \{5\}\ ko\ no\ SUM = 3413_{PRIME}$$
$$[1]^{1.}, kara, [6]^6, made\ no, \{6\}\ ko\ no\ SUM = 50069_{PRIME}$$
$$[1]^{1.}, kara, [10]^{10}, made\ no, \{10\}\ ko\ no\ SUM = 10405071317_{PRIME}$$
$$[1]^{1.}, kara, [30]^{30}, made\ no, \{30\}\ ko\ no\ SUM = (2.084924134 \times 10^{44})_{PRIME}$$
$$H = [1000]^{1000}\ madede \qquad (1)$$

>

```
> # x^h + y^h + z^h = w^h by H・E '22 − 3 − 11 :
> with(StringTools) :
> for h from 3 to 6 do print(H = (3) 項{h}乗反フェルマー数,
  FormatTime("%Y-%m-%d-(%r)") ) : hc := 0 :for x from 1 to 72 do for y from x + 1
  to 72 do for z from y + 1 to 72 do HFM := x^h + y^h + z^h :if floor(evalf(HFM^(1/h)))^h
  = HFM and hc ≤ 8 then hc := hc + 1 : print(x[。]^h + y[。]^h + z[。]^h
  = simplify(HFM^(1/h))[。]^h) : break if :od:if hc = 8 then break if :od:if hc = 8 then break
  if:od:if hc = 0 then print(NOT Found , H = (3)項{h} 乗反フェルマー数,
  FormatTime("%Y-%m-%d-(%r)") ) fi:od:
```

$H=3$ 項 $\{3\}$ 乗反フェルマー数, "2022-07-29-(08:05:21 AM)"

$$1^3_{。} + 6^3_{。} + 8^3_{。} = 9^3_{。}$$
$$2^3_{。} + 12^3_{。} + 16^3_{。} = 18^3_{。}$$
$$2^3_{。} + 17^3_{。} + 40^3_{。} = 41^3_{。}$$
$$3^3_{。} + 4^3_{。} + 5^3_{。} = 6^3_{。}$$
$$3^3_{。} + 10^3_{。} + 18^3_{。} = 19^3_{。}$$
$$3^3_{。} + 18^3_{。} + 24^3_{。} = 27^3_{。}$$
$$3^3_{。} + 36^3_{。} + 37^3_{。} = 46^3_{。}$$
$$4^3_{。} + 17^3_{。} + 22^3_{。} = 25^3_{。}$$

$H=3$ 項 $\{4\}$ 乗反フェルマー数, "2022-07-29-(08:05:21 AM)"

NOT Found, $H=3$ 項 $\{4\}$ 乗反フェルマー数, "2022-07-29-(08:05:24 AM)"

$H=3$ 項 $\{5\}$ 乗反フェルマー数, "2022-07-29-(08:05:24 AM)"

NOT Found, $H=3$ 項 $\{5\}$ 乗反フェルマー数, "2022-07-29-(08:05:27 AM)"

$H=3$ 項 $\{6\}$ 乗反フェルマー数, "2022-07-29-(08:05:27 AM)"

NOT Found, $H=3$ 項 $\{6\}$ 乗反フェルマー数, "2022-07-29-(08:05:30 AM)" **(1)**

```
> for h from 3 to 6 do print(H = (4) 項{h}乗反フェルマー数,
  FormatTime("%Y-%m-%d-(%r)") ) : hc := 0 :if h = 3 then xs := 2 else xs := 1 fi:for x
  from xs to 72 do for y from x + 1 to 72 do for z from y + 1 to 100 do for w from z + 1
  to 120 do HFM := x^h + y^h + z^h + w^h :if floor(evalf(HFM^(1/h)))^h = HFM and hc ≤ 5
  then hc := hc + 1 : print(x[。]^h + y[。]^h + z[。]^h + w[。]^h
  = simplify(HFM^(1/h))[。]^h) : break if :od:if hc = 5 then break if :od:if hc = 5 then break
  if:od:if hc = 5 then break if:od:if hc = 0 then print(NOT Found , H
  = (4) 項{h}乗反フェルマー数, FormatTime("%Y-%m-%d-(%r)") ) fi:od:
```

$H=4$ 項 $\{3\}$ 乗反フェルマー数, "2022-07-29-(08:25:56 AM)"

$$2^3_{。} + 3^3_{。} + 8^3_{。} + 13^3_{。} = 14^3_{。}$$
$$2^3_{。} + 4^3_{。} + 13^3_{。} + 27^3_{。} = 28^3_{。}$$

```
> #Natural Number and 2D 3D 4D Phytagoras INTEGER ' 21-10-24 rv by H.E :
>
> with(StringTools) : print(蛭子井博孝, 2ー4Dピタゴラス数一覧,
      FormatTime("%Y-%m-%d-(%r)")) :
```

蛭子井博孝, 2ー4 Dピタゴラス数一覧, "2021-10-24-(06:16:18 PM)" **(1)**

```
> print(蛭子井博孝, 2Dピタゴラス数一覧, FormatTime("%Y-%m-%d-(%r)")) : pita2 := 0 :
      lc := 0 : p2c := 0 : P2Ds := { } :for a from 1 to 58 do for b from a to 58 do lc := lc + 1 : L1 :=
      a : L2 := b : ll := (a^2 + b^2)^(1/2) : LL := ll^2 :if floor(evalf(LL^(1/2)))^2 = LL then pita2 := pita2
      + 1 : pri := ( ) : pri := ([a, b][No{lc}]) : pri := (L1[A]^2 + L2[B]^2 = simplify(LL^(1/2))[C]^2,
      No{pita2/[lc]}) : g := igcd(L1, L2) : he := 1/g : L1 := he·L1 : L2 := he·L2 : ll := he
      ·simplify(LL^(1/2)) : P2Ds := P2Ds union {L1[A]^2 + L2[B]^2 = ll[C]^2} : pri := ("-----", L1[A]^2
      + L2[B]^2 = ll[C]^2, [a, b][No{pita2}], "-----") fi:od:od:
      print(2DPITAの直角を挟む2辺が1から23までの直角三角形({lc}個のピタゴラス整数(共
      約数処理済み)一覧(nops(P2Ds)))) : print(蛭子井博孝, 2Dピタゴラス数一覧,
      FormatTime("%Y-%m-%d-(%r)")) :for hj from 1 to 10 do print(ピタゴラス整数一覧(hj)
      = P2Ds[hj]) :od: print(蛭子井博孝, 2Dピタゴラス数一覧,
      FormatTime("%Y-%m-%d-(%r)")) :
```

蛭子井博孝, 2 Dピタゴラス数一覧, "2021-10-24-(05:56:16 PM)"

2 DPITAの直角を挟む2辺が1から23までの 直角三角形({1711} 個のピタゴラス整数(共約数処理済み) 一覧(10))

蛭子井博孝, 2 Dピタゴラス数一覧, "2021-10-24-(05:56:16 PM)"

$$ピタゴラス整数一覧(1) = (3_A^2 + 4_B^2 = 5_C^2)$$
$$ピタゴラス整数一覧(2) = (5_A^2 + 12_B^2 = 13_C^2)$$
$$ピタゴラス整数一覧(3) = (7_A^2 + 24_B^2 = 25_C^2)$$
$$ピタゴラス整数一覧(4) = (8_A^2 + 15_B^2 = 17_C^2)$$
$$ピタゴラス整数一覧(5) = (9_A^2 + 40_B^2 = 41_C^2)$$
$$ピタゴラス整数一覧(6) = (12_A^2 + 35_B^2 = 37_C^2)$$
$$ピタゴラス整数一覧(7) = (20_A^2 + 21_B^2 = 29_C^2)$$
$$ピタゴラス整数一覧(8) = (28_A^2 + 45_B^2 = 53_C^2)$$
$$ピタゴラス整数一覧(9) = (33_A^2 + 56_B^2 = 65_C^2)$$
$$ピタゴラス整数一覧(10) = (48_A^2 + 55_B^2 = 73_C^2)$$

蛭子井博孝, 2 Dピタゴラス数一覧, "2021-10-24-(05:56:16 PM)" **(2)**

```
>
> print(蛭子井博孝, 3Dピタゴラス数一覧, FormatTime("%Y-%m-%d-(%r)")) : pic3 := 0 : sc :=
      0 : P3Ds := { } :for a from 1 to 58 do for b from a to 58 do for c from b to 58 do sc := sc + 1 :
      S1 := 1/2·a·b : S2 := 1/2·a·c : S3 := 1/2·b·c : s := 1/2·((a^2 + b^2)^(1/2) + (a^2 + c^2)^(1/2) + (b^2
      + c^2)^(1/2)) : ss := (s·(s - (a^2 + b^2)^(1/2))·(s - (a^2 + c^2)^(1/2))·(s - (b^2 + c^2)^(1/2)))^(1/2) : SS :=
      (1/4·a^2·b^2 + 1/4·a^2·c^2 + 1/4·b^2·c^2) :if floor(evalf(ss, 20))^2 = evalf(SS, 20) and type(S1,
```

$$2_{\circ}^{3}+5_{\circ}^{3}+37_{\circ}^{3}+91_{\circ}^{3}=93_{\circ}^{3}$$

$$2_{\circ}^{3}+7_{\circ}^{3}+16_{\circ}^{3}+38_{\circ}^{3}=39_{\circ}^{3}$$

$$2_{\circ}^{3}+7_{\circ}^{3}+44_{\circ}^{3}+73_{\circ}^{3}=78_{\circ}^{3}$$

H=4 項{4} 乗反フェルマー数, "2022-07-29-(08:25:58 AM)"

NOT Found, *H*=4 項{4} 乗反フェルマー数, "2022-07-29-(08:31:04 AM)"

H=4 項{5} 乗反フェルマー数, "2022-07-29-(08:31:04 AM)"

NOT Found, *H*=4 項{5} 乗反フェルマー数, "2022-07-29-(08:36:21 AM)"

H=4 項{6} 乗反フェルマー数, "2022-07-29-(08:36:21 AM)"

NOT Found, *H*=4 項{6} 乗反フェルマー数, "2022-07-29-(08:41:42 AM)" **(2)**

```
> for h from 3 to 6 do print(H=(5) 項{h}乗反フェルマー数,
  FormatTime("%Y-%m-%d-(%r)")):hc:=0:for x from 1 to 72 do for y from x+1
  to 72 do for z from y+1 to 72 do for w from z+1 to 72 do  for v from w+1 to 72
  do HFM:=x^h+y^h+z^h+w^h+v^h:if floor(evalf(HFM^(1/h)))^h=HFM and hc<=5
  then hc:=hc+1:print(x[◦]^h+y[◦]^h+z[◦]^h+w[◦]^h+v[◦]^h
  =simplify(HFM^(1/h))[◦]^h):break if:od:if hc=5 then break if:od:if hc=5 then break
  if:od:if hc=5 then break if:od:if hc=5 then break if:od:if hc=0
  then print(NOT Found,H=(5) 項{h}乗反フェルマー数,
  FormatTime("%Y-%m-%d-(%r)")) fi:od:
```

H=5 項{3} 乗反フェルマー数, "2022-03-23-(11:03:06 AM)"

$$1_{\circ}^{3}+2_{\circ}^{3}+4_{\circ}^{3}+12_{\circ}^{3}+24_{\circ}^{3}=25_{\circ}^{3}$$

$$1_{\circ}^{3}+2_{\circ}^{3}+6_{\circ}^{3}+24_{\circ}^{3}+38_{\circ}^{3}=41_{\circ}^{3}$$

$$1_{\circ}^{3}+2_{\circ}^{3}+6_{\circ}^{3}+31_{\circ}^{3}+48_{\circ}^{3}=52_{\circ}^{3}$$

$$1_{\circ}^{3}+2_{\circ}^{3}+7_{\circ}^{3}+10_{\circ}^{3}+14_{\circ}^{3}=16_{\circ}^{3}$$

$$1_{\circ}^{3}+2_{\circ}^{3}+8_{\circ}^{3}+31_{\circ}^{3}+38_{\circ}^{3}=44_{\circ}^{3}$$

H=5 項{4} 乗反フェルマー数, "2022-03-23-(11:03:07 AM)"

$$1_{\circ}^{4}+2_{\circ}^{4}+12_{\circ}^{4}+24_{\circ}^{4}+44_{\circ}^{4}=45_{\circ}^{4}$$

$$1_{\circ}^{4}+8_{\circ}^{4}+12_{\circ}^{4}+32_{\circ}^{4}+64_{\circ}^{4}=65_{\circ}^{4}$$

$$1_{\circ}^{4}+8_{\circ}^{4}+24_{\circ}^{4}+36_{\circ}^{4}+38_{\circ}^{4}=45_{\circ}^{4}$$

$$2_{\circ}^{4}+13_{\circ}^{4}+16_{\circ}^{4}+44_{\circ}^{4}+48_{\circ}^{4}=55_{\circ}^{4}$$

$$2_{\circ}^{4}+14_{\circ}^{4}+28_{\circ}^{4}+33_{\circ}^{4}+52_{\circ}^{4}=55_{\circ}^{4}$$

H=5 項{5} 乗反フェルマー数, "2022-03-23-(11:05:08 AM)"

$$19_{\circ}^{5}+43_{\circ}^{5}+46_{\circ}^{5}+47_{\circ}^{5}+67_{\circ}^{5}=72_{\circ}^{5}$$

H=5 項{6} 乗反フェルマー数, "2022-03-23-(11:21:53 AM)"

NOT Found, *H*=5 項{6} 乗反フェルマー数, "2022-03-23-(11:40:01 AM)" **(3)**

```
>
```

```
>
```

(1)

```
> # 34567つ子   search
> restart :
> with(StringTools) : print(蛭子井博孝の幾何数学, FormatTime("%Y-%m-%d-(%r)")) :
```

蛭子井博孝の幾何数学, "2021-03-21-(06:07:59 PM)" (2)

```
> Stop2038074743{100000000} thp , [2533447{3} つ子計, 132712{4} つ子計, 157{5} つ子計, 2{6} つ子計, 0]
```

$Stop_{2038074743\{100000000\}\ thp}$, [$2533447_{\{3\}\ つ子計}$, $132712_{\{4\}\ つ子計}$, $157_{\{5\}\ つ子計}$, $2_{\{6\}\ つ子計}$, 0] (3)

```
> print(蛭子井博孝の幾何数学, FormatTime("%Y-%m-%d-(%r)")) : st := Time( ) : np :=
    nextprime(1) : for h from 1 to 7 do  c||h := 0 od:for h from 1 to 200000000 do P||1 :=
    np : PS := { } : pc := 1 :for e from 2 to 7 do P||e := nextprime(P||(e − 1)): PS := PS
    union {P||e − P||(e − 1)}: if nops(PS) = 1 then pc := pc + 1 : c||pc := c||pc + 1 else
    break if:od:if pc ≥ 3 and c||pc ≤ 3then  print(((pc)つ子)[No(c||pc)][[(P||1)[{c
    ||2} thp], seq(P||j, j = 2 .. pc)]]):if pc = 5 or pc = 6  then T := Time( ) −st : print(T
    [From start])fi:if pc = 6 then print( ) : print(at [(P||1)[c||2]], ConTab[seq((c
    ||j)[{j}つ子計], j = 3 ..7)]) : print( )fi fi: np := nextprime(P||1) :od:
    print(蛭子井博孝の幾何数学, FormatTime("%Y-%m-%d-(%r)")) : print(Stop[(P||1)
    [{c||2} thp]], [seq((c||j)[{j}つ子計], j = 3 ..7)]):
```

蛭子井博孝の幾何数学, "2021-03-21-(06:08:18 PM)"

$((3\ つ子)_{No(1)})_{[3_{\{2\}\ thp}, 5, 7]}$

$((3\ つ子)_{No(2)})_{[47_{\{15\}\ thp}, 53, 59]}$

$((3\ つ子)_{No(3)})_{[151_{\{36\}\ thp}, 157, 163]}$

$((4\ つ子)_{No(1)})_{[251_{\{54\}\ thp}, 257, 263, 269]}$

$((4\ つ子)_{No(2)})_{[1741_{\{271\}\ thp}, 1747, 1753, 1759]}$

$((4\ つ子)_{No(3)})_{[3301_{\{464\}\ thp}, 3307, 3313, 3319]}$

$((5\ つ子)_{No(1)})_{[9843019_{\{654926\}\ thp}, 9843049, 9843079, 9843109, 9843139]}$

$(31996\ \text{ms})_{From\,start}$

$((5\ つ子)_{No(2)})_{[37772429_{\{2305989\}\ thp}, 37772459, 37772489, 37772519, 37772549]}$

$(128290\ \text{ms})_{From\,start}$

$((5\ つ子)_{No(3)})_{[53868649_{\{3218754\}\ thp}, 53868679, 53868709, 53868739, 53868769]}$

$(183693\ \text{ms})_{From\,start}$

$((6\ つ子)_{No(1)})_{[121174811_{\{6904737\}\ thp}, 121174841, 121174871, 121174901, 121174931, 121174961]}$

$(411348\ \text{ms})_{From\,start}$

$$at\left[121174811_{6904737}\right], ConTab_{198599}{}_{\{3\}\ つ子計}{}^{12056}{}_{\{4\}\ つ子計}{}^{12}{}_{\{5\}\ つ子計}{}^{1}{}_{\{6\}\ つ子計}{}^{0}$$

$$\left((6\ つ子)_{No(2)}\right)\left[1128318991_{\{57021665\}\ thp}, 1128319021, 1128319051, 1128319081, 1128319111, 1128319141\right]$$

$$(3873782\ \mathrm{ms})_{From\,start}$$

$$at\left[1128318991_{57021665}\right], ConTab_{1482370}{}_{\{3\}\ つ子計}{}^{79953}{}_{\{4\}\ つ子計}{}^{97}{}_{\{5\}\ つ子計}{}^{2}{}_{\{6\}\ つ子計}{}^{0}$$

$$\left((6\ つ子)_{No(3)}\right)\left[2201579179_{\{107613548\}\ thp}, 2201579209, 2201579239, 2201579269, 2201579299, 2201579329\right]$$

$$(7476889\ \mathrm{ms})_{From\,start}$$

$$at\left[2201579179_{107613548}\right], ConTab_{2717557}{}_{\{3\}\ つ子計}{}^{141698}{}_{\{4\}\ つ子計}{}^{170}{}_{\{5\}\ つ子計}{}^{3}{}_{\{6\}\ つ子計}{}^{0}$$

$$蛭子井博孝の幾何数学, \text{"2021-03-21-(08:17:31 PM)"}$$

$$Stop_{2287334891}{}_{\{111597148\}\ thp}, \left[2813473_{\{3\}\ つ子計}, 146449_{\{4\}\ つ子計}, 175_{\{5\}\ つ子計}, 3_{\{6\}\ つ子計}, 0\right] \quad (4)$$

>
>

素数論　予想H.E　等間隔素数7つ子以上は存在しない

間隔30より大にあるか

2型双子　$7\ 元連鎖_{No_1}\ 双子素数$

$$T7_{元_1} = [678771479, 678771481]$$
$$T7_{元_2} = [678771491, 678771493]$$
$$T7_{元_3} = [678771551, 678771553]$$
$$T7_{元_4} = [678771557, 678771559]$$
$$T7_{元_5} = [678771617, 678771619]$$
$$T7_{元_6} = [678771647, 678771649]$$
$$T7_{元_7} = [678771659, 678771661]$$

自己紹介

日本図学会名誉会員推薦書

候補者　正会員　蛭子井博孝氏

蛭子井博孝先生は、1973 年 3 月大阪大学応用物理学科を、鈴木達郎研で、電界放出型電子銃における加速レンズ系の解析という卒論を提出し、卒業後、直ちに同大学院工学研究科応用物理学専攻に進学され、当初 LISP インタープリタの制作開発研究に従事し、病気や事故で、遅れながらも、さらにインターネット通信制御装置をミニコン上にインプリメントする開発研究に参加され、音響カプラーで公衆回線網を用いて利用できる Terminal ＩＭＰという修論を提出され、1977 年 3 月修了されました。大学 4 年間には、コースの勉学とは別に、デカルトの卵形線について、独自自主研究を、教養部図学教室の増田祥三助教授を相談役に、続けられ、4 年次、日本図学会の学生会員になり、処女論文、”デカルトの卵形線の 2，3 の性質”を日本図学会誌、図学研究に投稿、掲載されました。このように、早くから、図学の幾何学の分野に目覚められ、業績を積まれました。大学院中にも、修士研究とは別に、デカルトの卵形線について、第二作目の論文を書かれています。

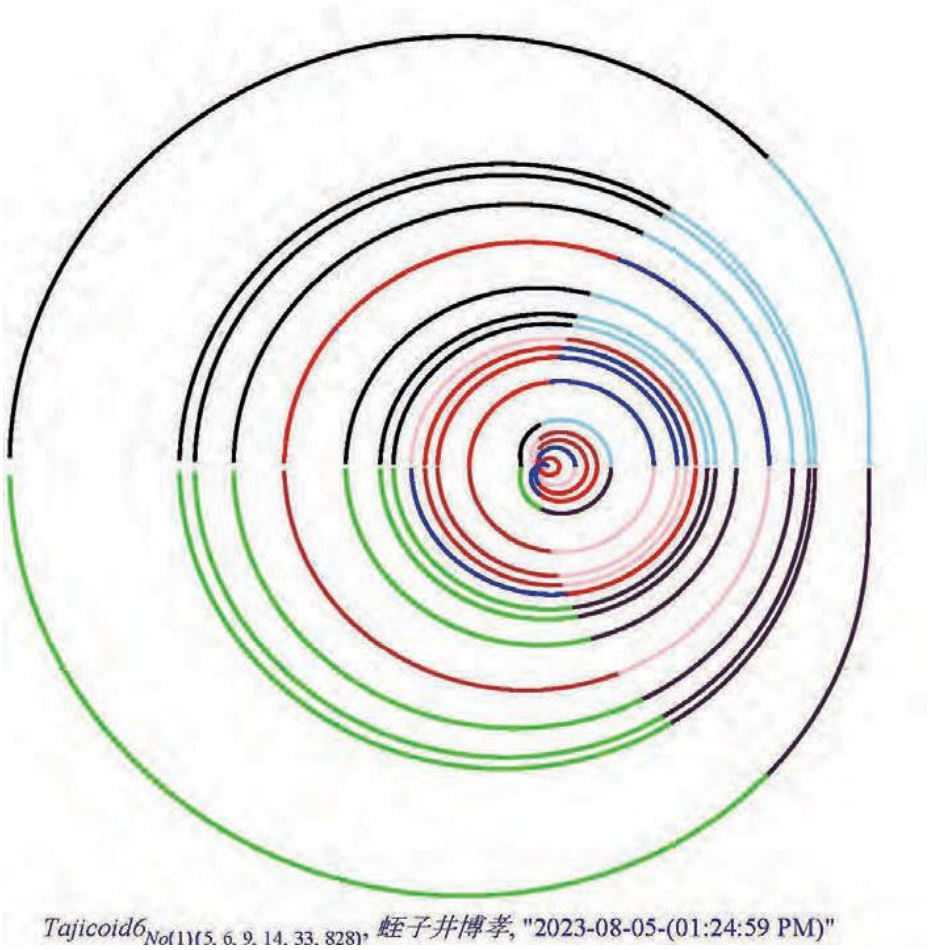
1977 年、広島女学院高校数学科教員に着任され、9 年間の数学教育に従事されながら、当時、登場した、マイコン（PC)）を利用し、入試処理システムを開発、さらに、学校時間割作成支援システムの開発し、学校教育教務事務のスピード化を図られました。この教員時、PC と xy プロッターを利用した、三作目のデカルトの卵形線の論文を書かれました。1986 年春、放射線影響研究所に転職され、所内コンピュータセンターに、研究員として，勤務され、原爆被爆生存者の被曝線量の計算マネージメントの仕事に従事され、放射能医療の領域に、寄与されました。その線量計算修了後精勤勤務感謝状をもらわれ退職され、その直後、第 4 作目のデカルトの卵形線の考察論文を書かれました。このように、20 年間図形科学の研究を続けられ、多大な業績を残されました。生活費を得るため、再び、福山暁の星女子高校の数学教員になり、そこでは、パソコン係で学校全学年全教科の成績処理を受け持ち，その間も、図形幾何学の自主研究をされ、卵形線研究上の新発見、短軸の位置と長さを、国際図学会で、発表されました。1995 年教員退職後、直ちに、卵形線研究センターを設立、研究活動に専念されました。卵形線の研究を進める中、1997 年日本図学会から、デカルトの卵形線に関する研究で、論文賞を授与されました。これで、名実ともに、図形幾何学の業績を作られました。これからは、国際会議に、毎年参加され発表を続けられました。2004 年の ICGG でデカルトの卵形線の内外分枝合わせて、DOVAL と命名し、DOVAL の研究を続けられました。DOVAL の多極焦点化の研究において、数式処理ソフト Maple を用い、解析幾何を利用し、タジコイドを作図した、功績は、多大でしょう。さらに研究は、DOVAL の原始化図形の研究に進み、基礎図形科学の領域に進みました。そして、CAD や運動幾何学などの科学技術ソフトなくしてはできない 2006 年 8 月 7 日バラの定理と名付けられた、共線定理の発見、その証明も発表され、以後、基礎幾何学の研究を続けられました。2010 には、ヘキサゴンの定理を、ＩＣＧＧで発表されました。バラの定理発見は、報道網にも公表され、以後研究成果の学会発表と展示会発表活動を続けられ、2016 年幾何数学研究センターを併設され、研究を続けられ、その成果は、ＷＥＢサイト上に公開されるようになりました。この間、特筆される発見は、ダイアバラの定理、ダイアの定理　スターダイアの定理等多数あり、これらは、教育活動を考慮した、PDF 電子本の形で、公開されるようになりました。

以上のように、図形基礎科学の DOVAL をメインにした長年の研究業績と功績は多大であり、ここに、その功績をたたえ、日本図学会名誉会員になることを推薦します．　2021年3月

OHVALに改名2022-12-1

日本図学会理事会に提出した名誉会員自己推薦文

2021年6月吉日　日本図学会名誉会員称号授与証書を拝受



Tajicoid6$_{No(1)(5, 6, 9, 14, 33, 828)}$, 蛭子井博孝, "2023-08-05-(01:24:59 PM)"

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