数学日記　愛と理想　第21日

蛭子井博孝編著

１．歴史の中の定理　　もーれーの周辺定理

２．どれもみんなの定理　　点線円幾何学　103-2

３．どれもみんなのパチクリ　　EYE

４．Hoval　　Doval　第３定義の周辺

５．今日の言葉、

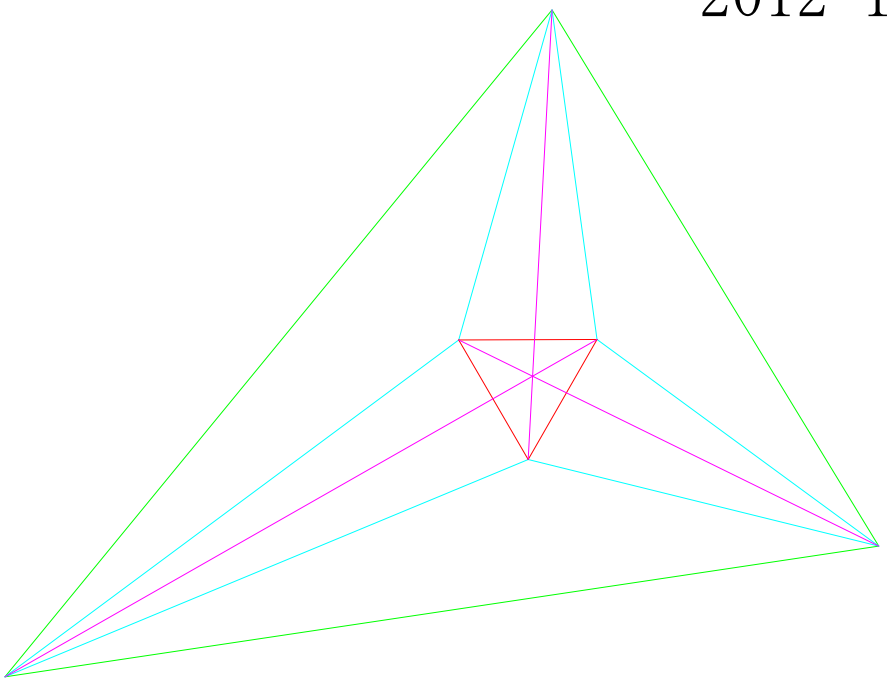
とるよりとられる方がまだまし。

６．　基本問題　垂直平行問題.

７．　詩集　白き筋雲

モーレーの周辺定理

2012-11-28



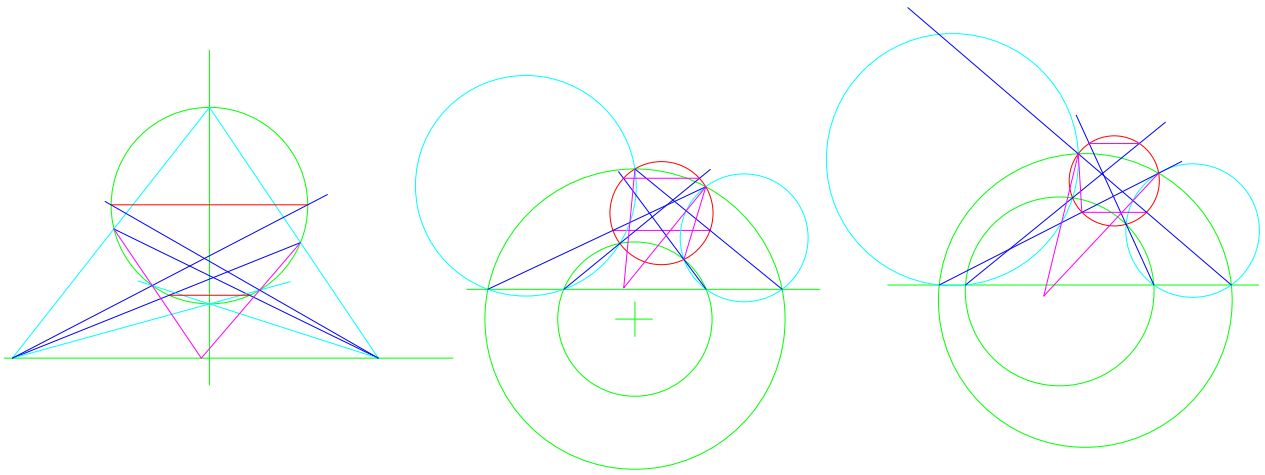
蛭子井博孝：

数学日記　愛と理想　第21日

HI-103-2

同心円の平行線定理２

2008-1-30



左の図と右の図本質的に同じだろうか

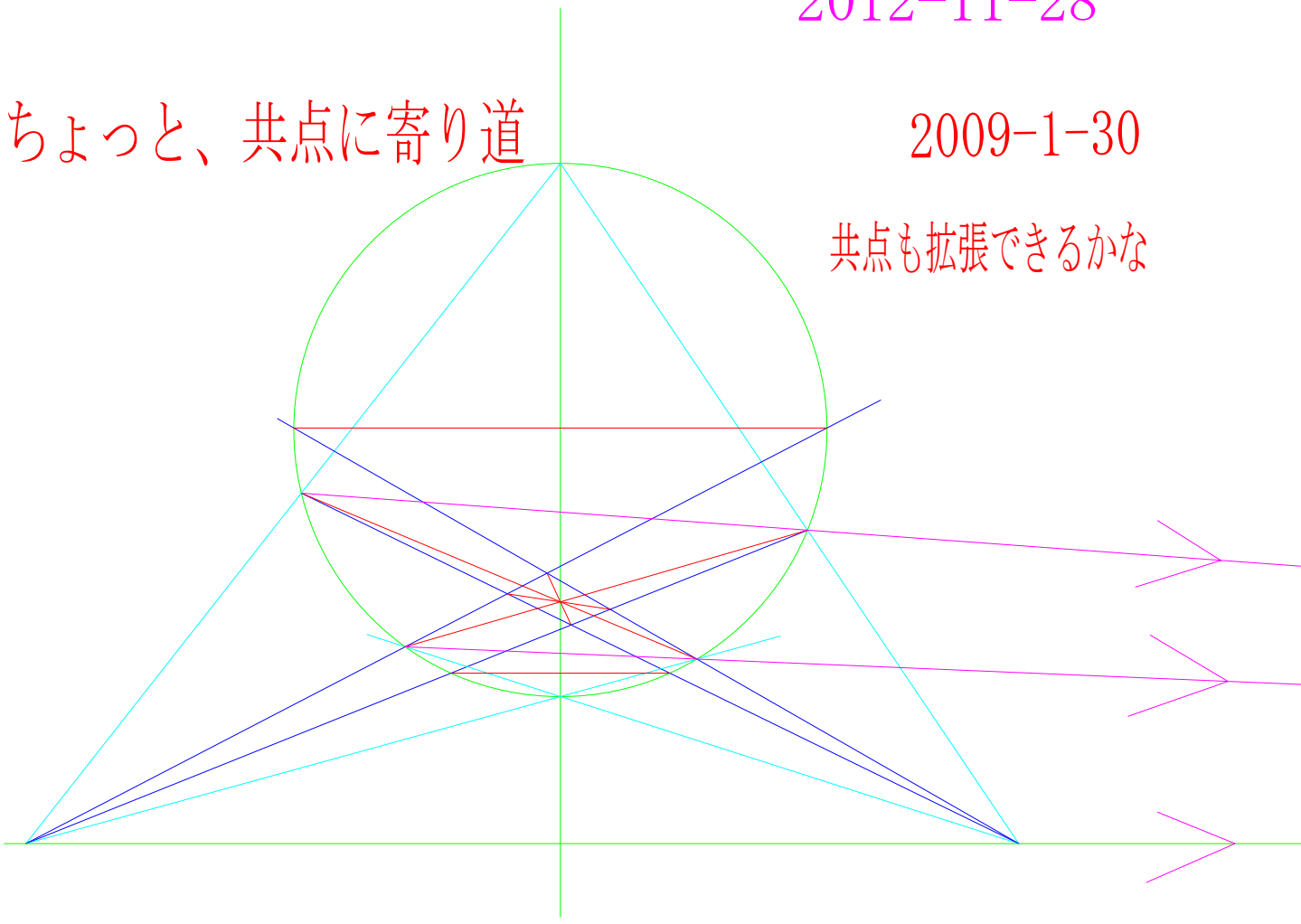
by　蛭子井博孝

2012-11-28

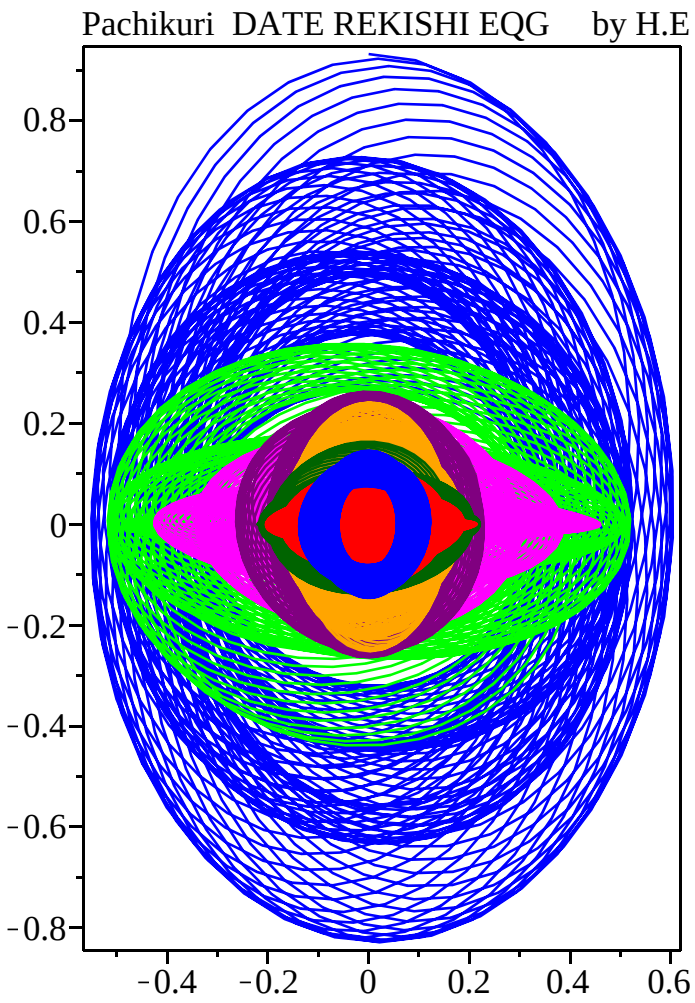
ちょっと、共点に寄り道

2009-1-30

共点も拡張できるかな



パチクリ　Eye



"09-06:00:54 PM"

"Pachikuri Ho Sujigumo by H.E"

$TL709G4 - O47, HEB = [5, 4, 1]$

$$X = \frac{1}{4}\sin(20\,t)\sin\left(\frac{\cos(\cos(t))}{1+t}\right) + \sin(709\,t)\sin\left(\frac{\cos(\cos(t))}{1+t}\right)$$

$$Y = \frac{1}{4}\cos(20\,t)\sin\left(\frac{\sin(\cos(t))}{1+t}\right) + \cos(709\,t)\sin\left(\frac{\sin(\cos(t))}{1+t}\right)$$

"Pachikuri hongo to ha meikyokutukuri by H.E"

数学日記　愛と理想　第21日

数学日記　愛と理想　第21日

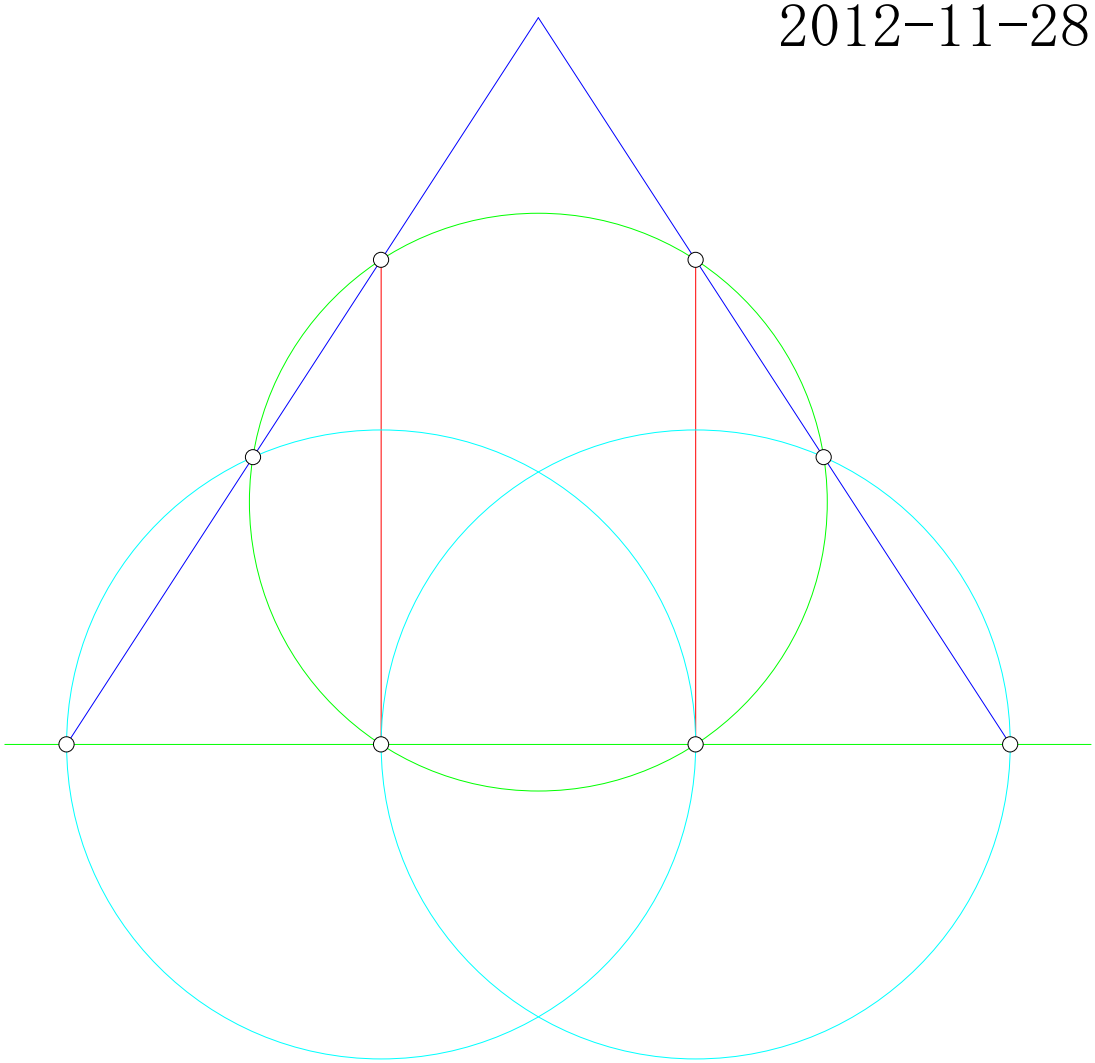
Doval の第３定義の周辺定理

2012/11/30

蛭子井博孝：

垂直平行問題

2012-11-28



蛭子井博孝：

数学日記　愛と理想　第21日

白き筋雲

くる秋を一人空見て楽しまん白き筋雲高空の風

生きている秋の空気のさわやかさ一人静かに故山に登る

タイプうち心の発露求めては君に捧げし今夜は楽し

悲しみも知らず生きてた少年の遠き昔に今日は帰ろう

愛されて育った自分だのにもう愛する人は身近にはいず

小夜ふけて心を洗う静けさに悲しみいつか消えてゆくなり

訪れた一夜の夢に過ぎし日を重ねて過ごす老いも忘れて

心の平和

真っ白なノートに大きく図を入れたそうしたら解けた難問の謎

今までで一番君が僕のことわかってくれた痛みもすべて

今日もまた心の平和おとずれて希望が湧いてすべて明るく

今日から街に出て行く田舎などおもしろくない子供が言う

君がいて始めて僕は楽しんだ再会の日も雨であったが

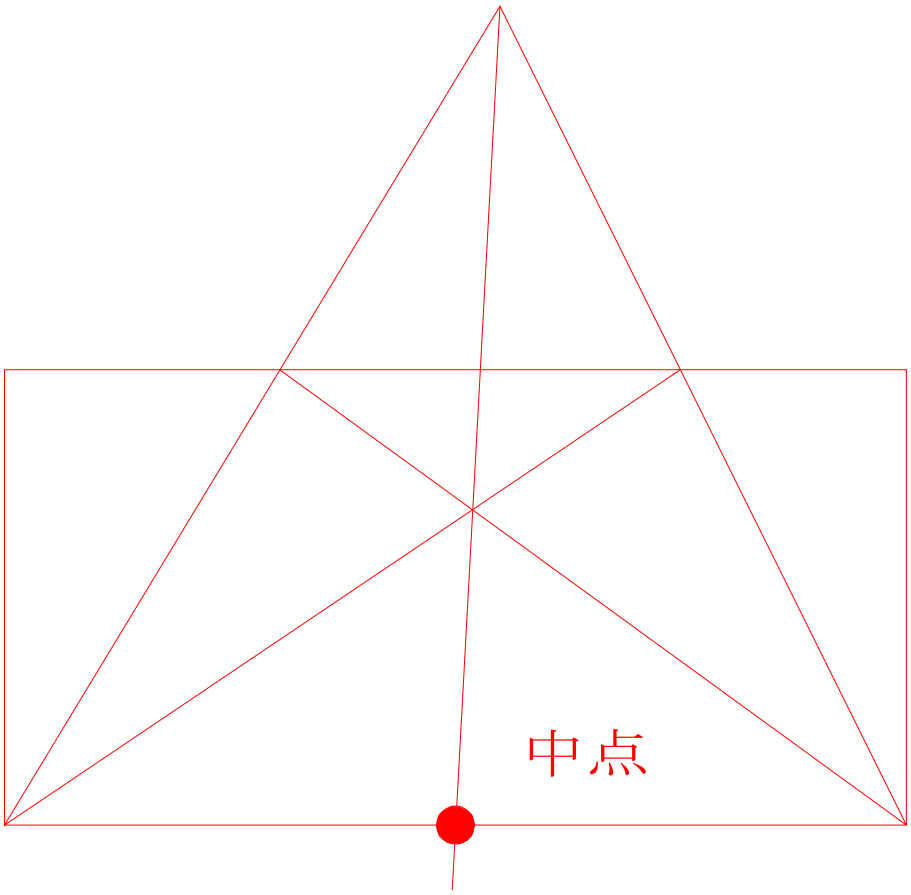
秋の日に君と出かけた港にはカモメが飛んだ漁船があった

アパートの　短い暮らし　思い出の　町には今日も　夕日が照らす

二昔　過ぎて心は　浄化した　すべての痛み　苦痛の日々を

巡り来る　はるやいつしか　葉桜の　木陰に憩う　夏を待ちぬる

ありがとう



数学日記　愛と理想　第22日

蛭子井博孝編著

1．ナポレオンの周辺定理

１．どれもみんなのパチクリ　花

１．どれもみんなの点線円幾何学　１０３－３

１．Doval　第四定義　周辺定理

１．今日の俳句

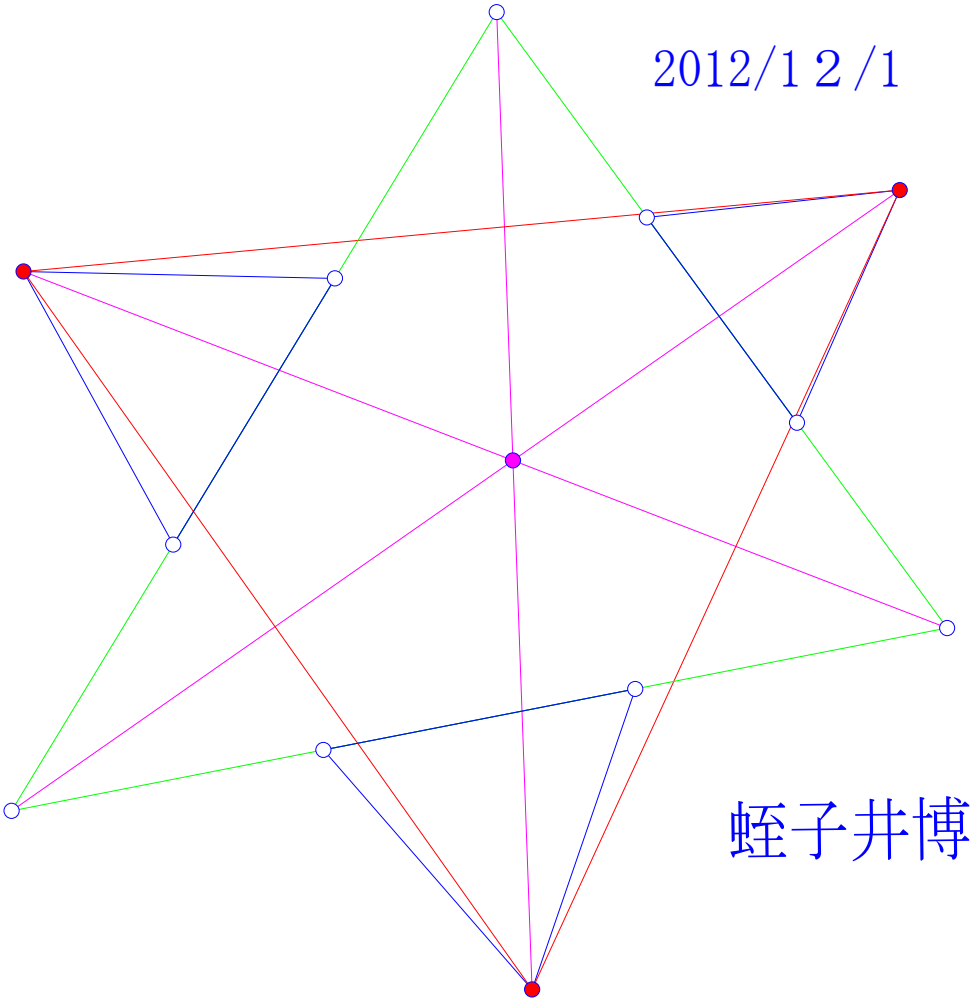
楽しさや冬がめぐりて愛淡く

１．基本問題　平行線円周上共点問題

数学日記　愛と理想　第22日

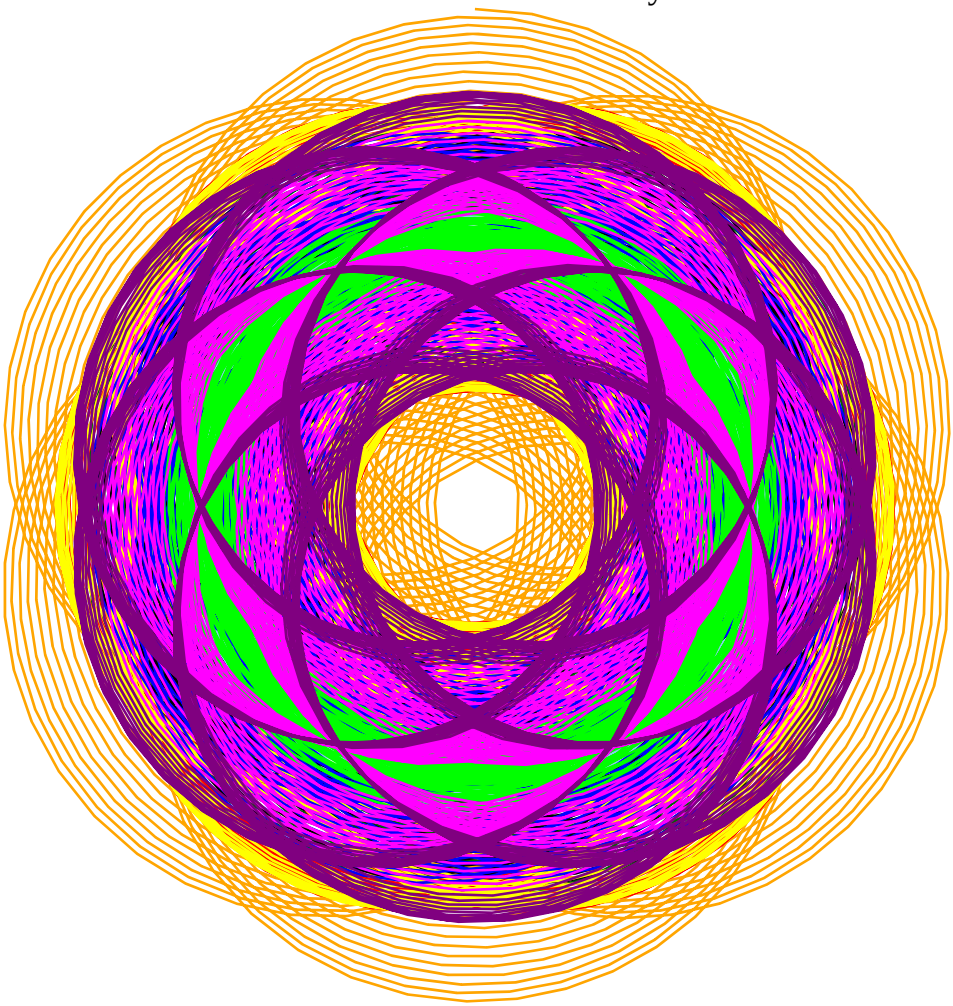
ナポレオンの周辺定理

2012/12/1



蛭子井博孝

Pachikuri 1201 SHIWASU by H.E



$$BGT = \text{"12-01-08:25:21 AM"},\ No = [1],\ HEB = [7, 5, 1]$$

$$X = \sin\left(\frac{8407}{12}\ t\right) + \sin\left(\frac{1201}{12}\ t\right)\cos(t)\ \cos\left(\cos\left(\frac{\cos(t)}{1+t}\right)\right)$$

$$Y = \cos\left(\frac{8407}{12}\ t\right) + \cos\left(\frac{1201}{12}\ t\right)\cos(t)\ \cos\left(\cos\left(\frac{\cos(t)}{1+t}\right)\right)$$

$$\left[t = 0\,..2\,\pi,\ st = \frac{1}{10}\right],\ 蛭子井博孝$$

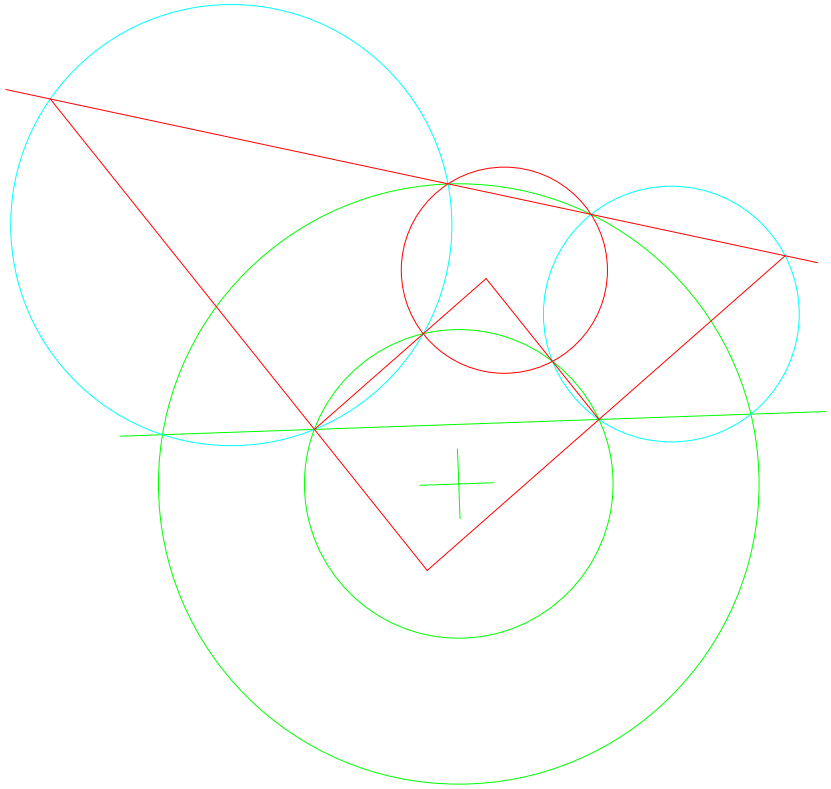
"2012-12-01-08:25:21 AM" **(4)**

>

HI-103-3

同心円の平行線定理２

2008-1-30

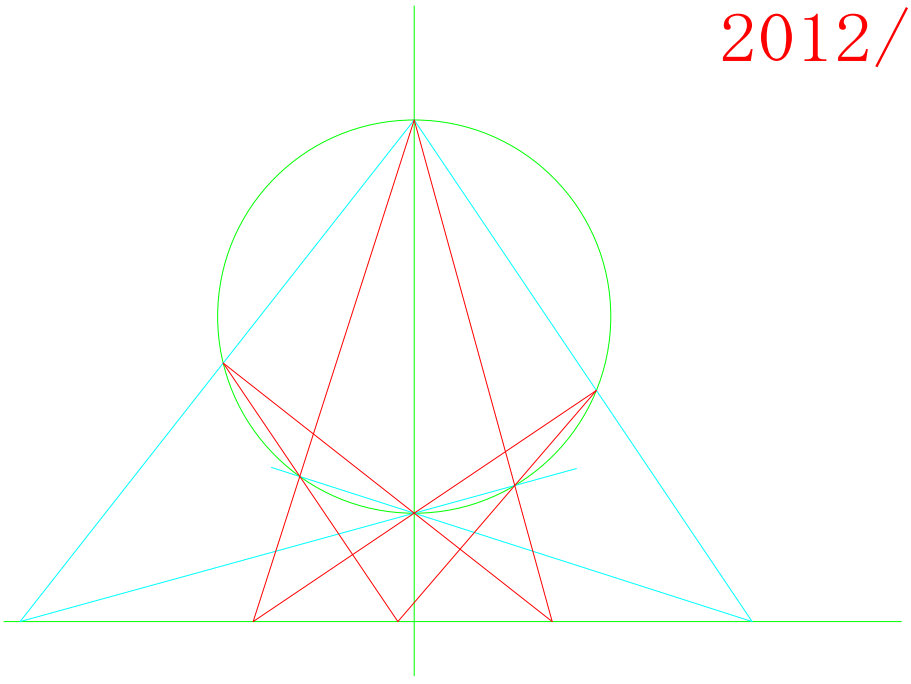


ｂｙ　蛭子井博孝

2009-4-17

ちょっと、共点に寄り道

2012/１２/1



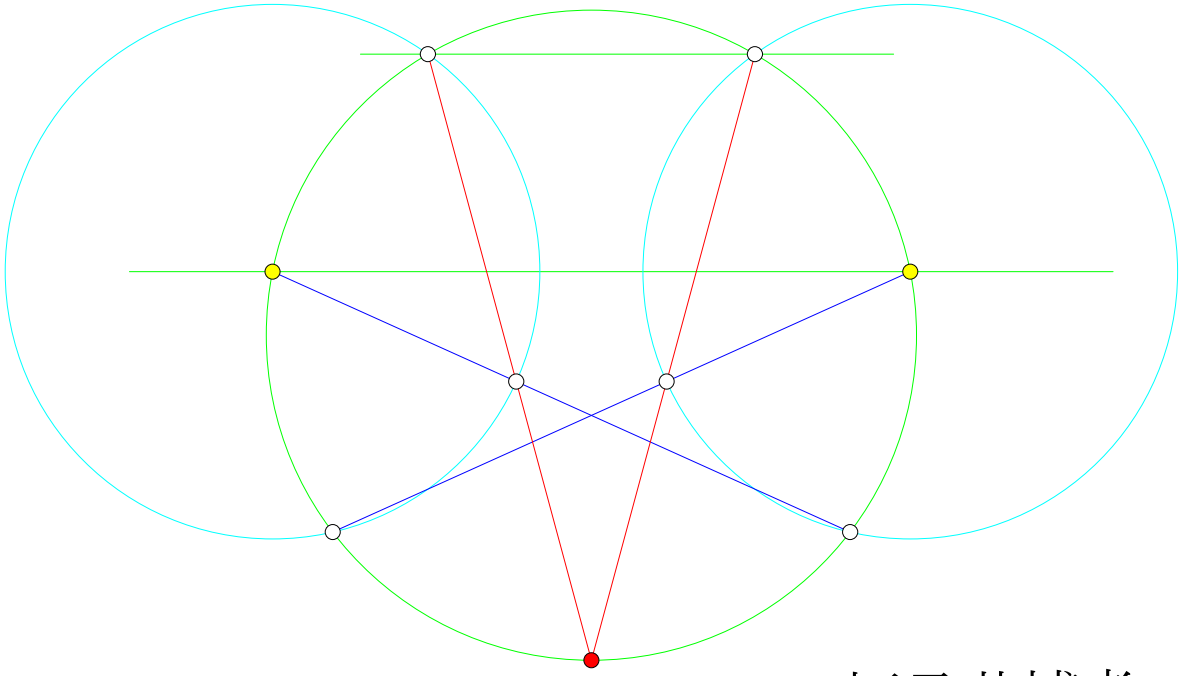
Doval の第4定義の周辺定理

2012/12/1

数学日記　愛と理想　第22日

平行共点問題

2012/12/1



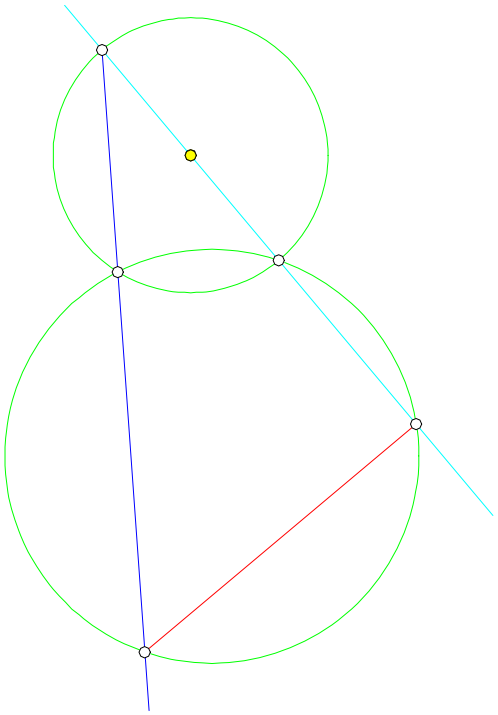
蛭子井博孝

数学日記　愛と理想　第22日

耕せば歌なり　山頭火

つぶやけば２人楽しい　微水弧山

ありがとう



数学日記　愛と理想　第 23 日

蛭子井博孝編著

1．パップスの定理の周辺

１．どれもみんなのパチクリ

１．どれもみんなの点線円幾何学　２０２－２

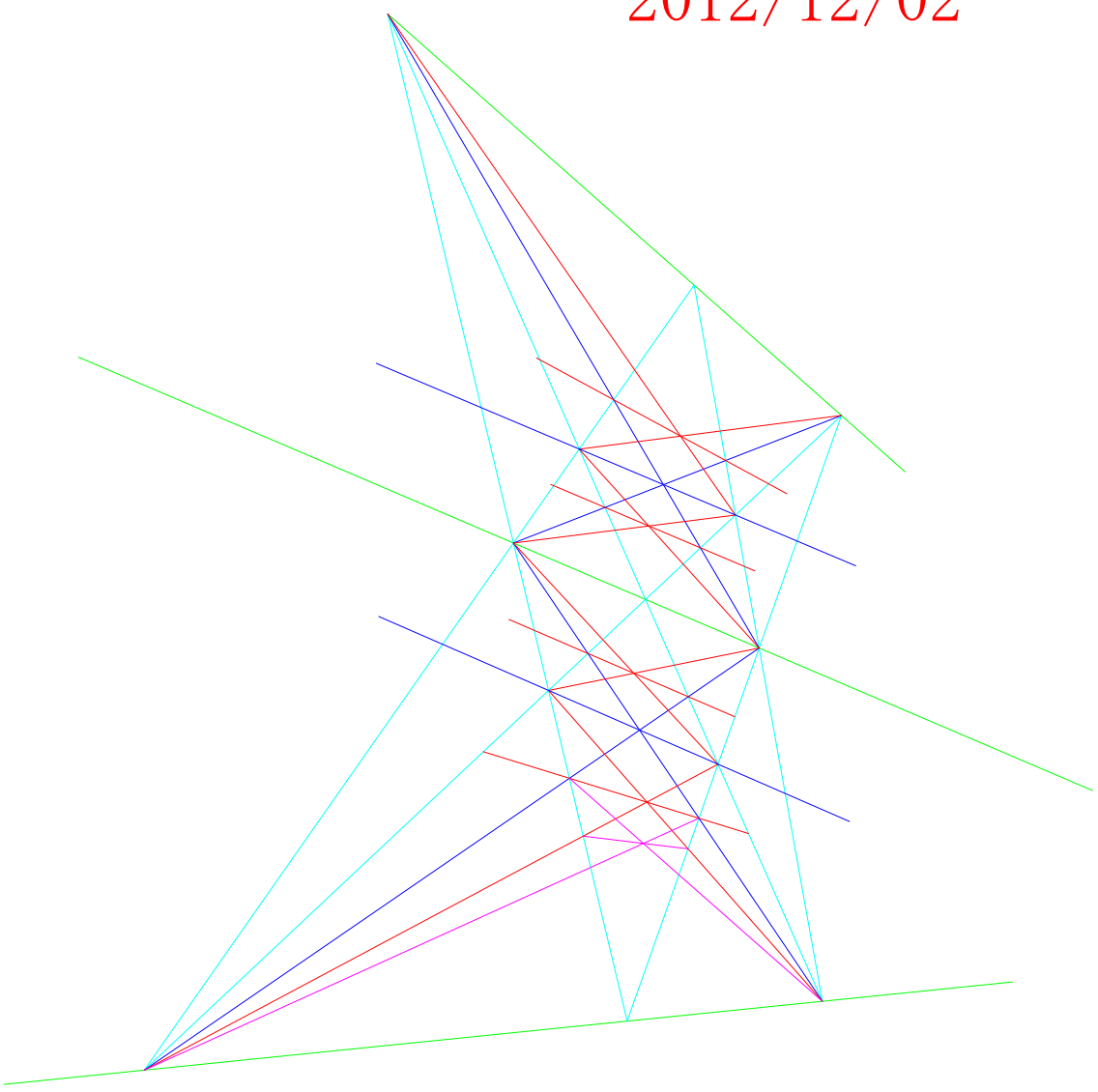
１．Doval の第１定義の周辺定理

１．今日も俳句
　　寒さくる町クリスマス飾り付け

１．基本問題

パップスの上下無限連鎖定理

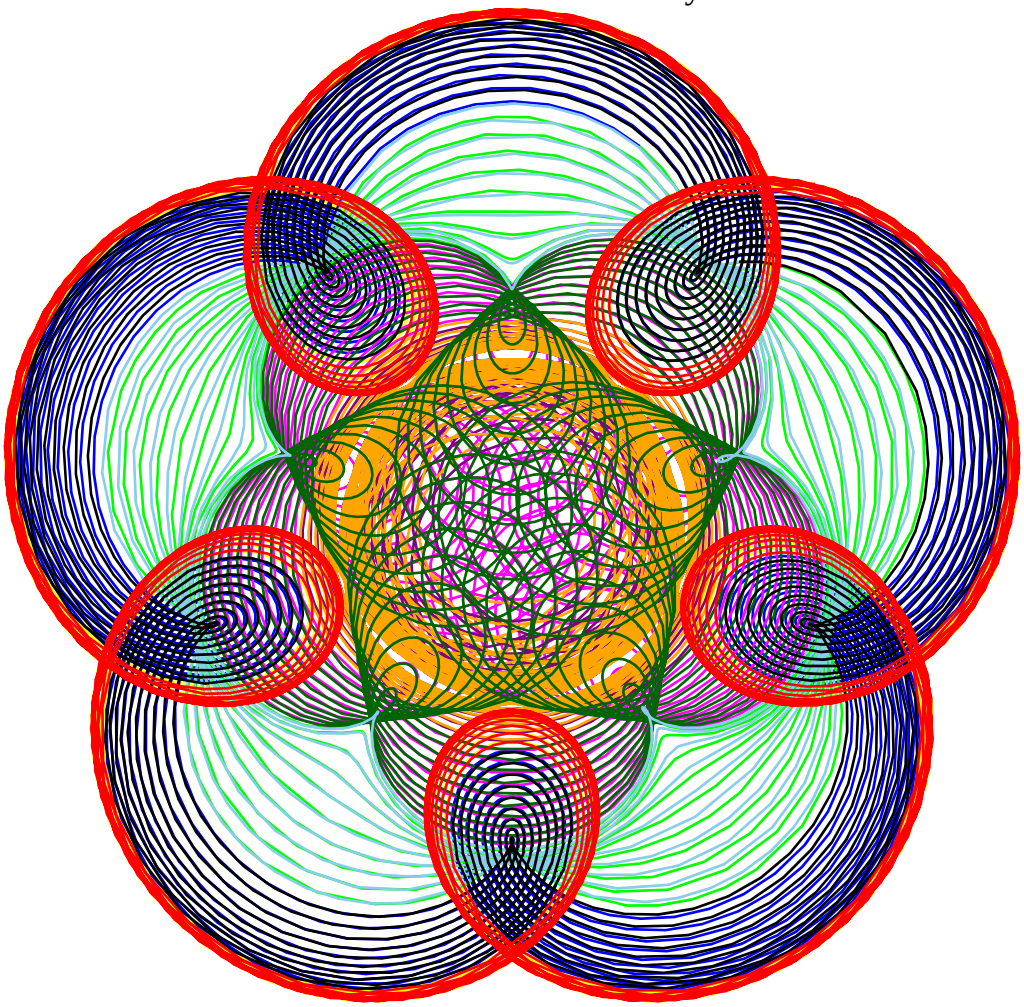
2012/12/02



蛭子井博孝

数学日記　愛と理想　第23日

PACHIKURI 1202 Shotou by H.E



BGT = "02 (08:40:49 AM)", [1], HEB = [7, 5, 2]

$$X = \sin\left(\frac{601}{6}\,t\right)\cos(\sin(\tan(\cos(t))))+\sin\left(\frac{4207}{12}\,t\right)\cos\left(\frac{3005}{12}\,t\right)\sin(\tan(\cos(t)))$$

$$Y = \cos\left(\frac{601}{6}\,t\right)\cos(\sin(\tan(\cos(t))))+\cos\left(\frac{4207}{12}\,t\right)\cos\left(\frac{3005}{12}\,t\right)\sin(\tan(\cos(t)))$$

$$\left[t = 0\,..2\,\pi,\ st = \frac{1}{8}\right],\ CN = \{3\},\ \textit{蛭子井博孝}$$

"2012-12-02 (08:40:49 AM)"

蛭子井博孝

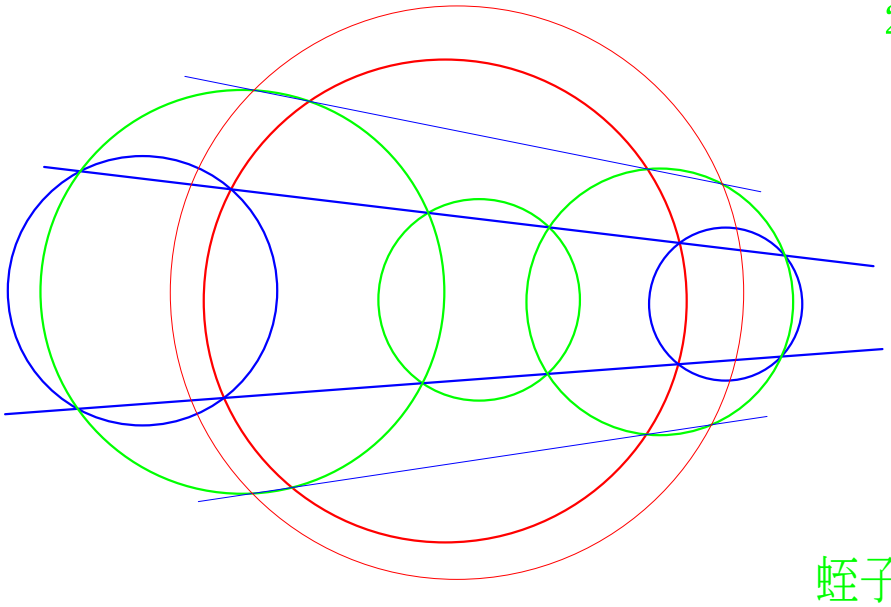
(4)

>

HI-202－2

共円定理

2008-2-27

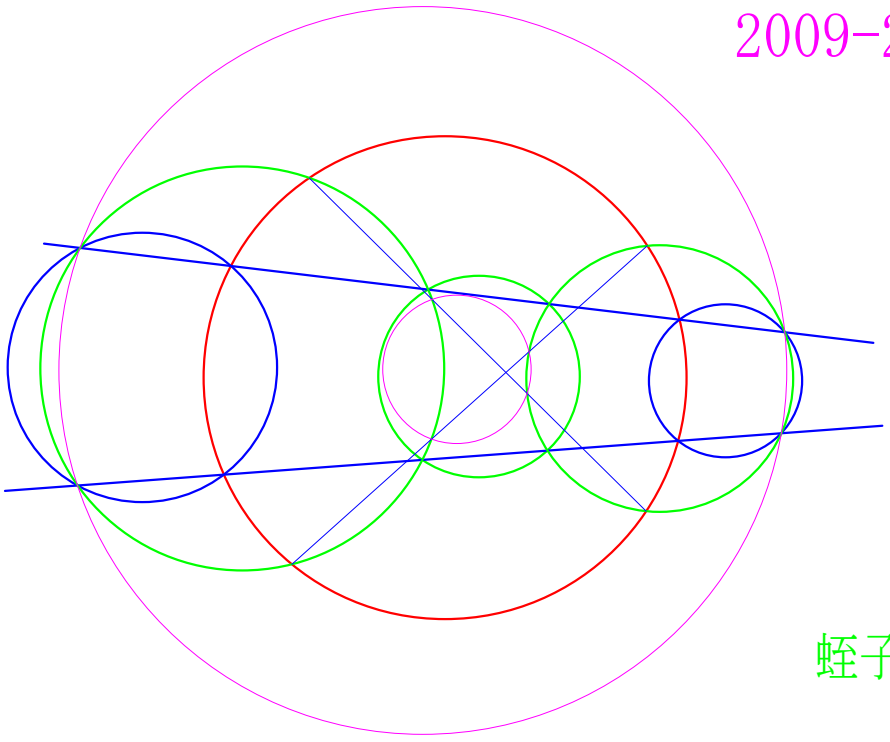


蛭子井博孝

2012-12-02

横　縦　斜め　高さ　奥

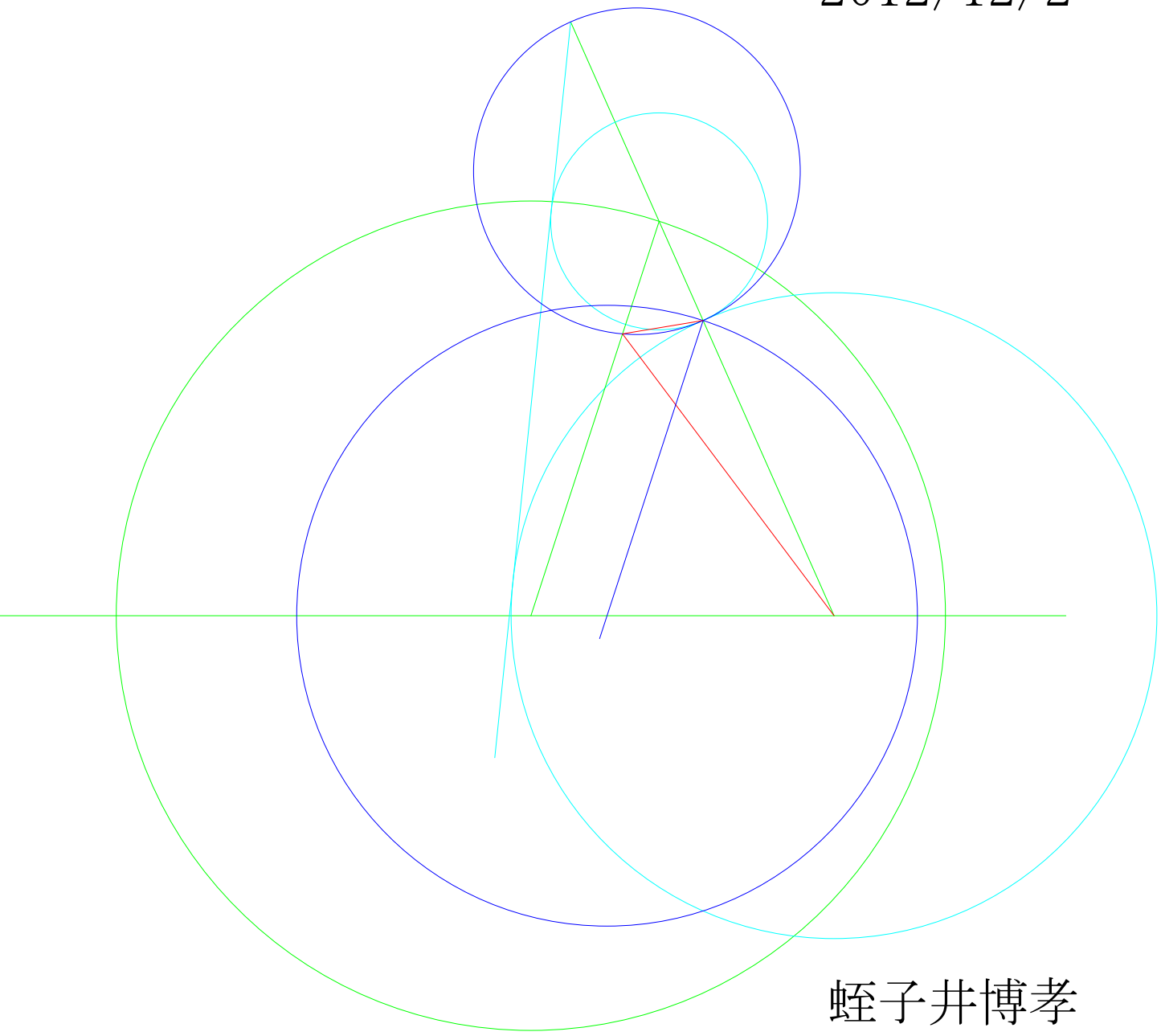
2009-2-7



蛭子井博孝

Doval の第1定義の新作図法

2012/12/2

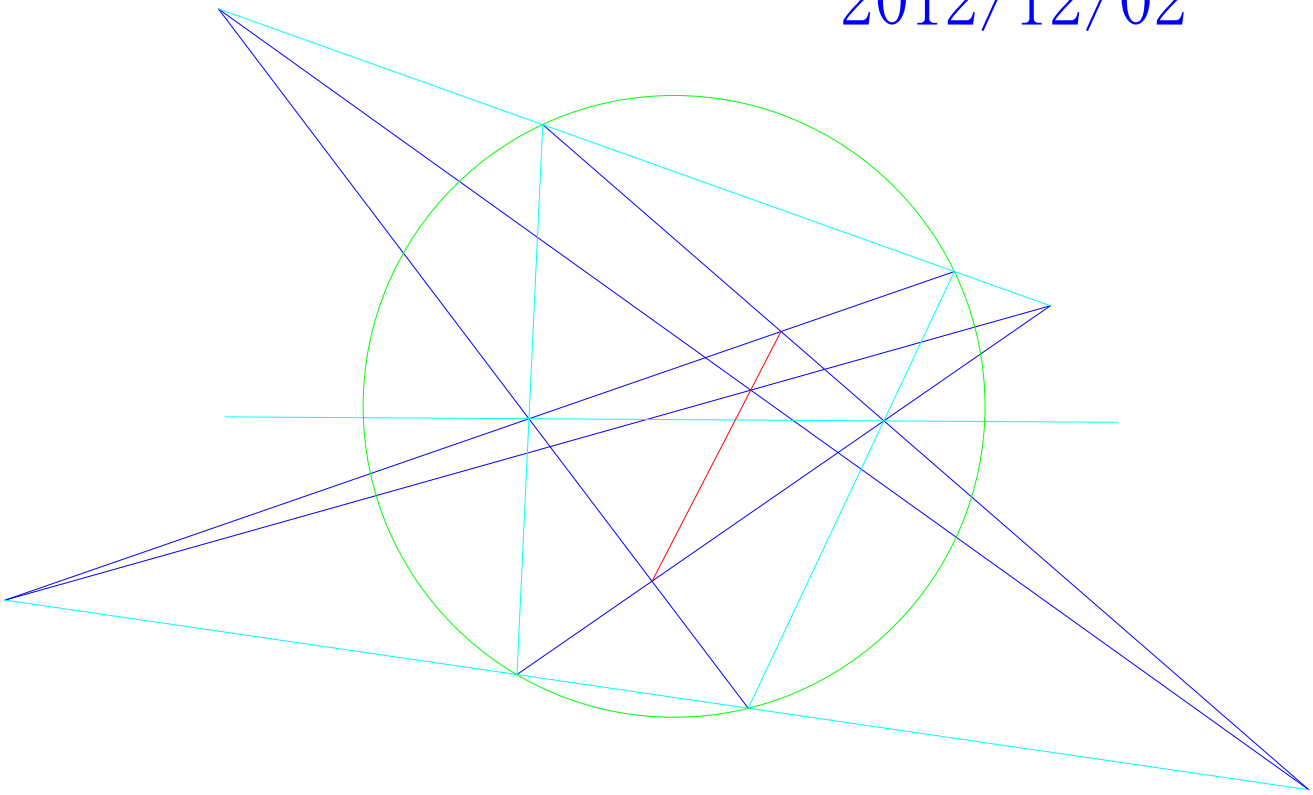


蛭子井博孝

数学日記　愛と理想　第23日

3線　共線定理

2012/12/02

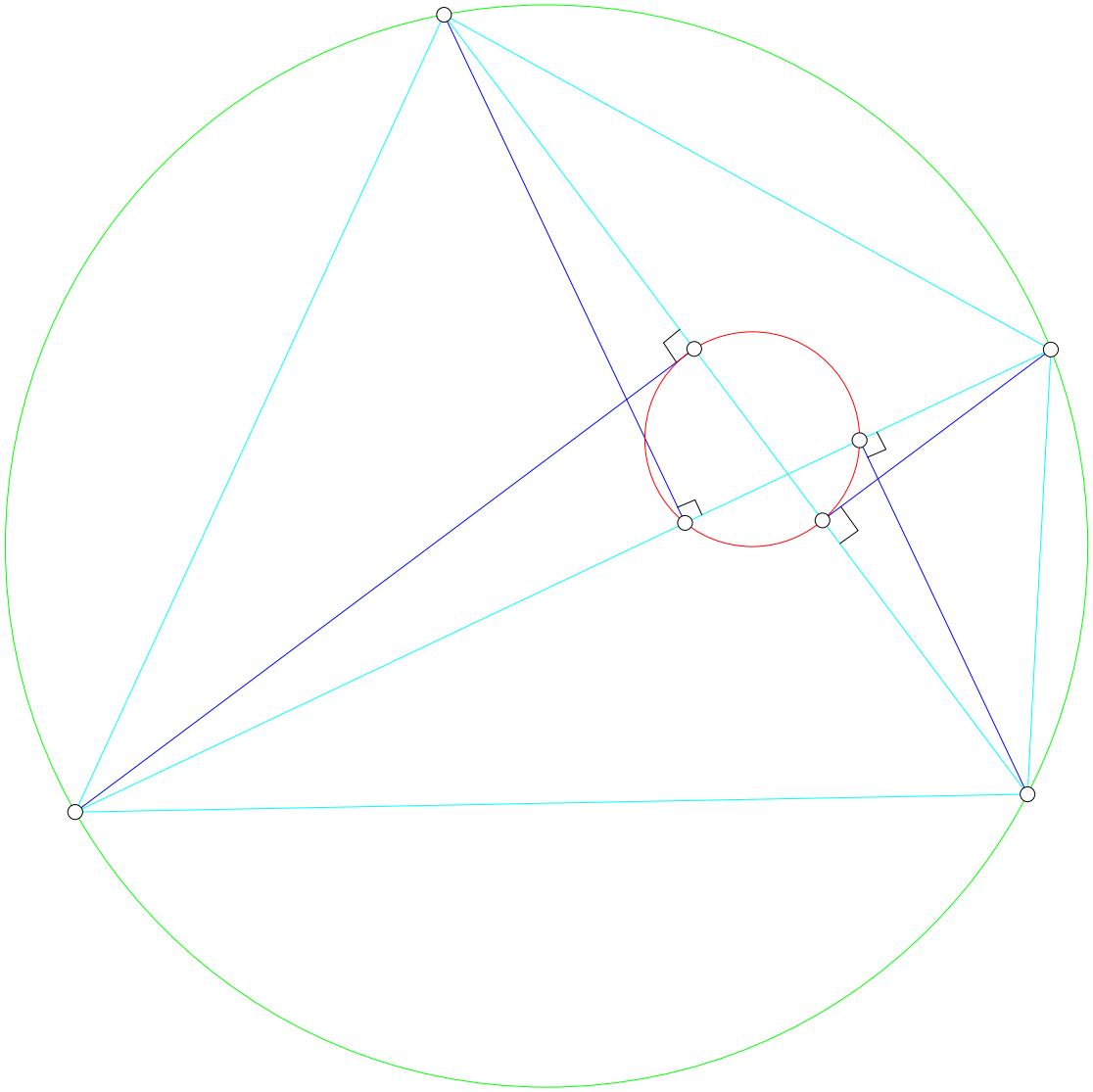


数学日記　愛と理想　第23日

蛭子井博孝

歩けば出会う二人
登れば見える景色
走れば汗かく真夏
食べればおいしいご飯
見ればうれしい笑顔

ありがとう



(HEX62)

数学日記　愛と理想　24日

蛭子井博孝編著

１．歴史の周辺定理　ナポレオンの四辺形か

１．どれもみんなのパチクリ　　忘れ物

１．どれもみんなの点線円幾何学　303-2

1．Doval　第二定義の周辺定理

１．今日の俳句

　うれしくてうれしくてゆく冬の町

１．基本問題　長方形の中の共円

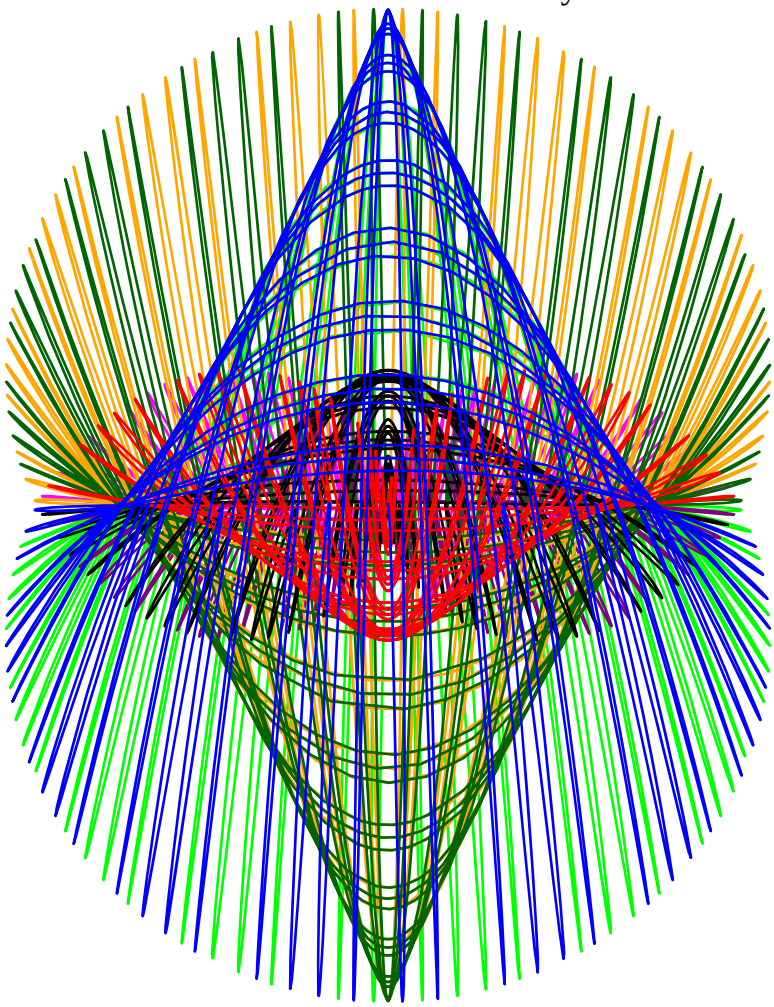
１。五行歌　さまよえば一人

2012-12-5

四辺形正三角形566。。。点共円無限拡大定理

蛭子井博孝

PACHIKURI 814 NATSU by H.E



BGT = "14 (08:00:35 AM)", [2], HEB = [1, 1, 2]

$$X = \sin(2\,t)\,\sin\left(\frac{11}{2}\cos(37\,t)\right)\cos(t)$$

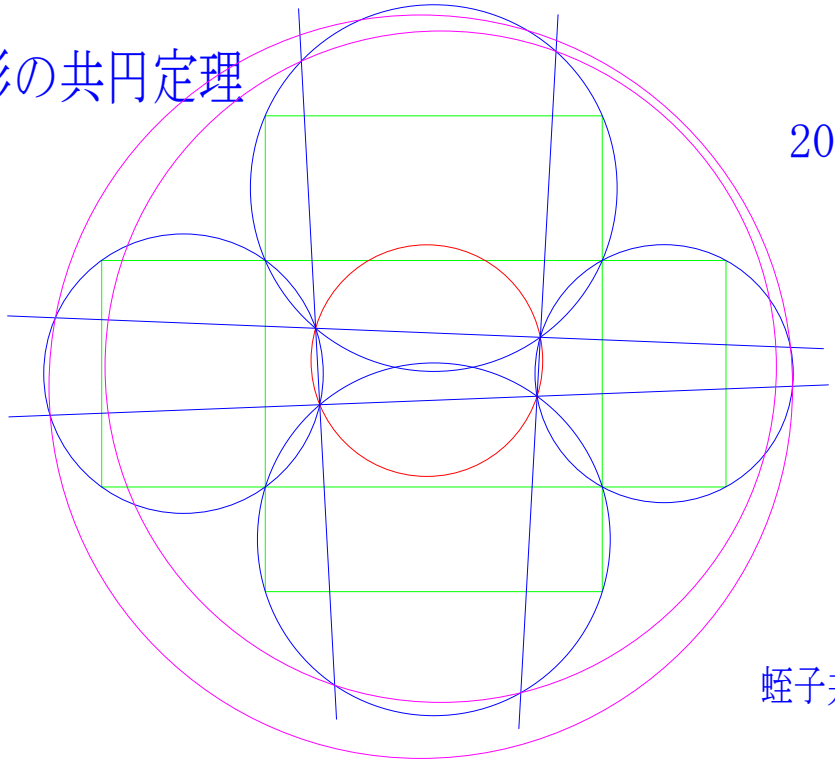
$$Y = \cos(2\,t)\,\cos(11\cos(37\,t))\,\cos(t)$$

$$\left[t = 0\,..2\,\pi,\ st = \frac{1}{8}\right]$$ 、 *蛭子井博孝*

HI-303-2

長方形の共円定理

2008-9-16

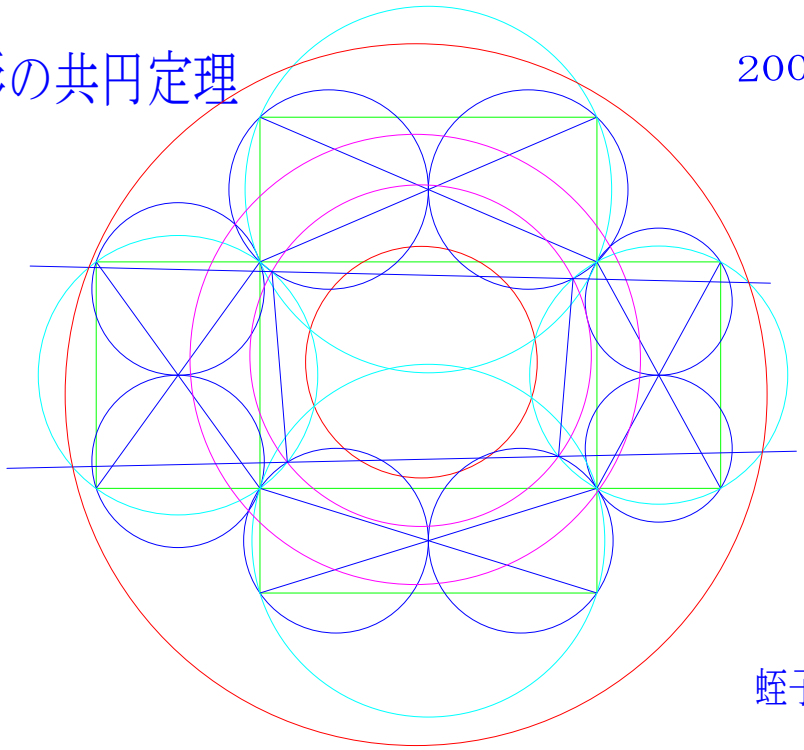


蛭子井博孝

2012-1-04

長方形の共円定理

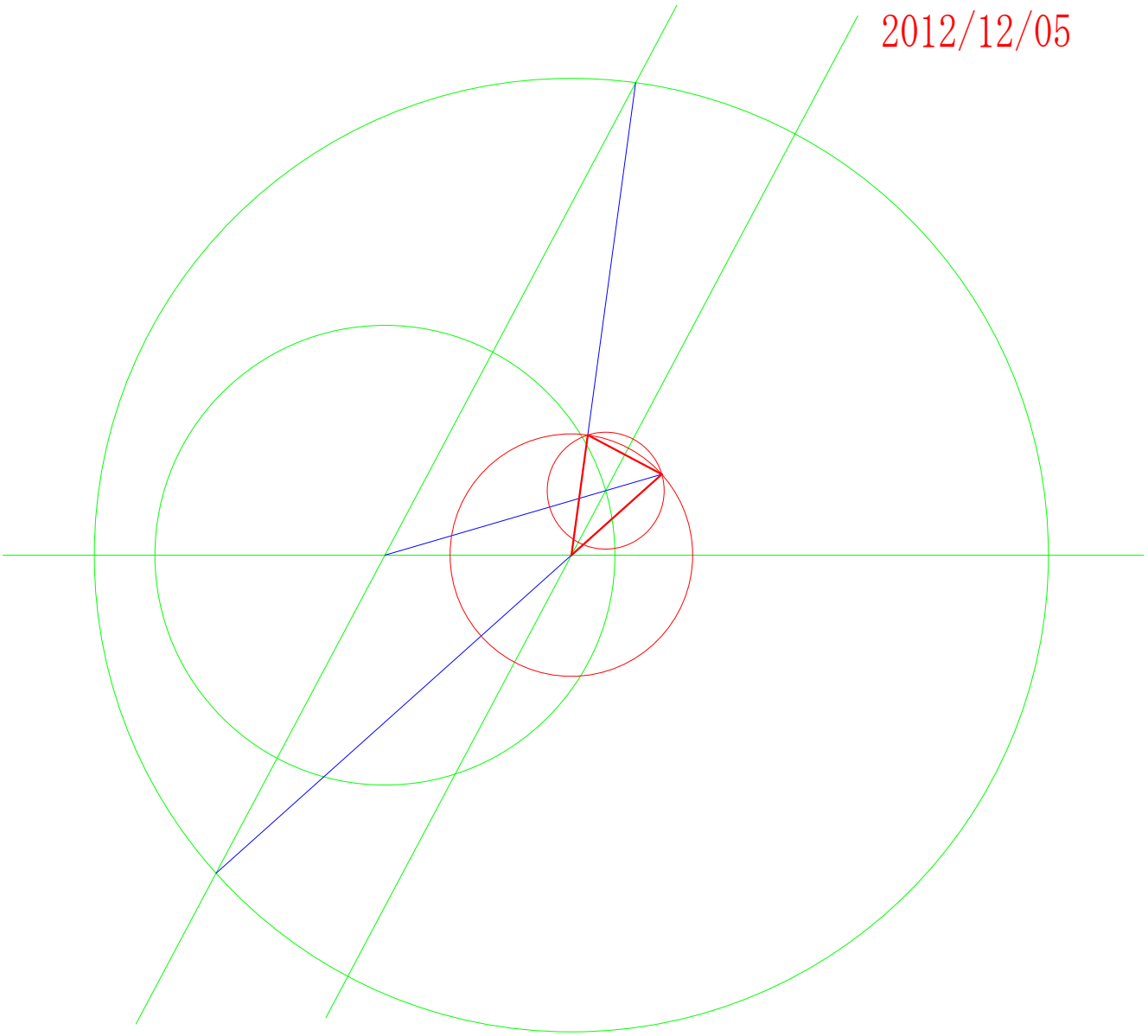
2009-2-21



蛭子井博孝

Dovalの第2定義の周辺定理

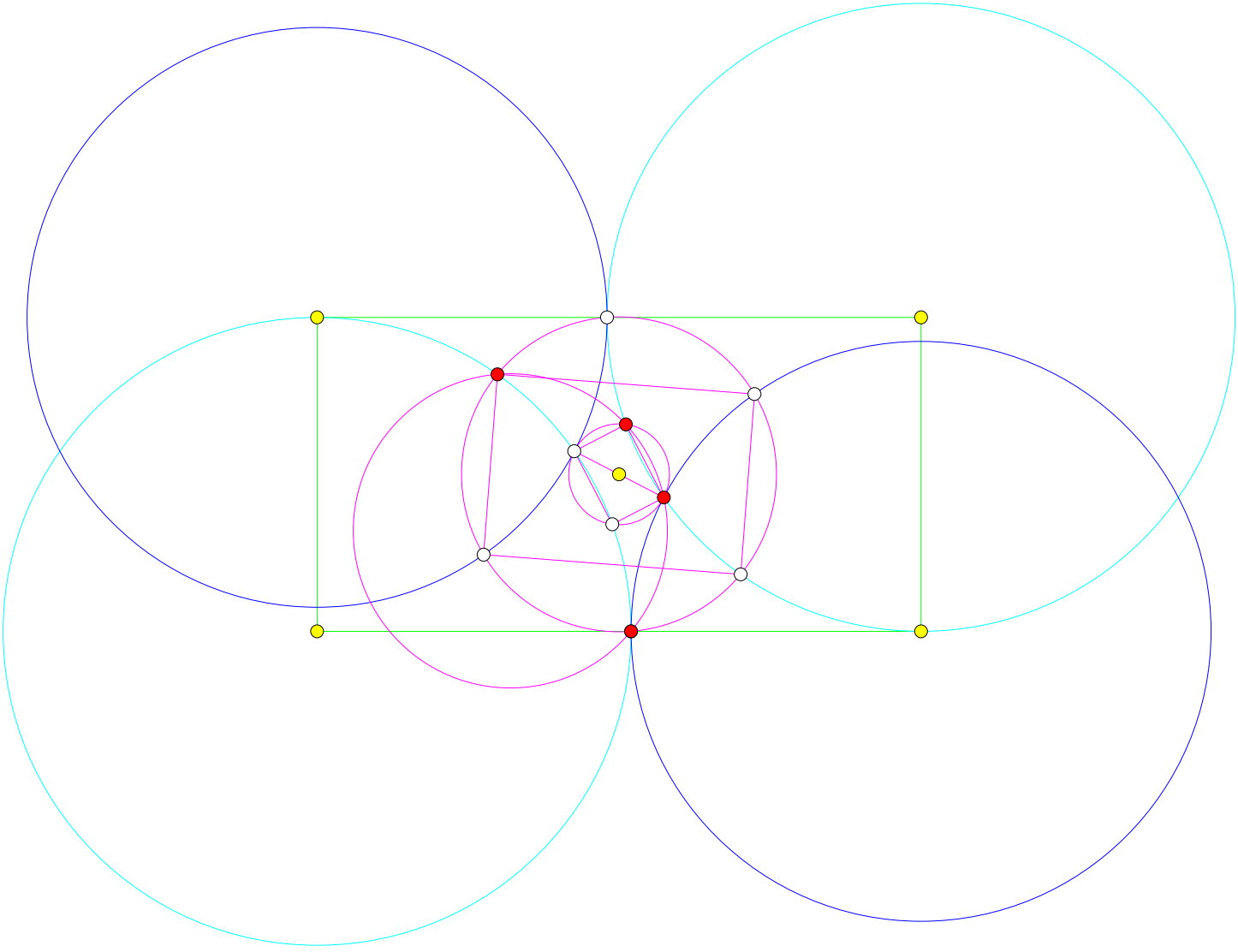
2012/12/05



蛭子井博孝

基本問題

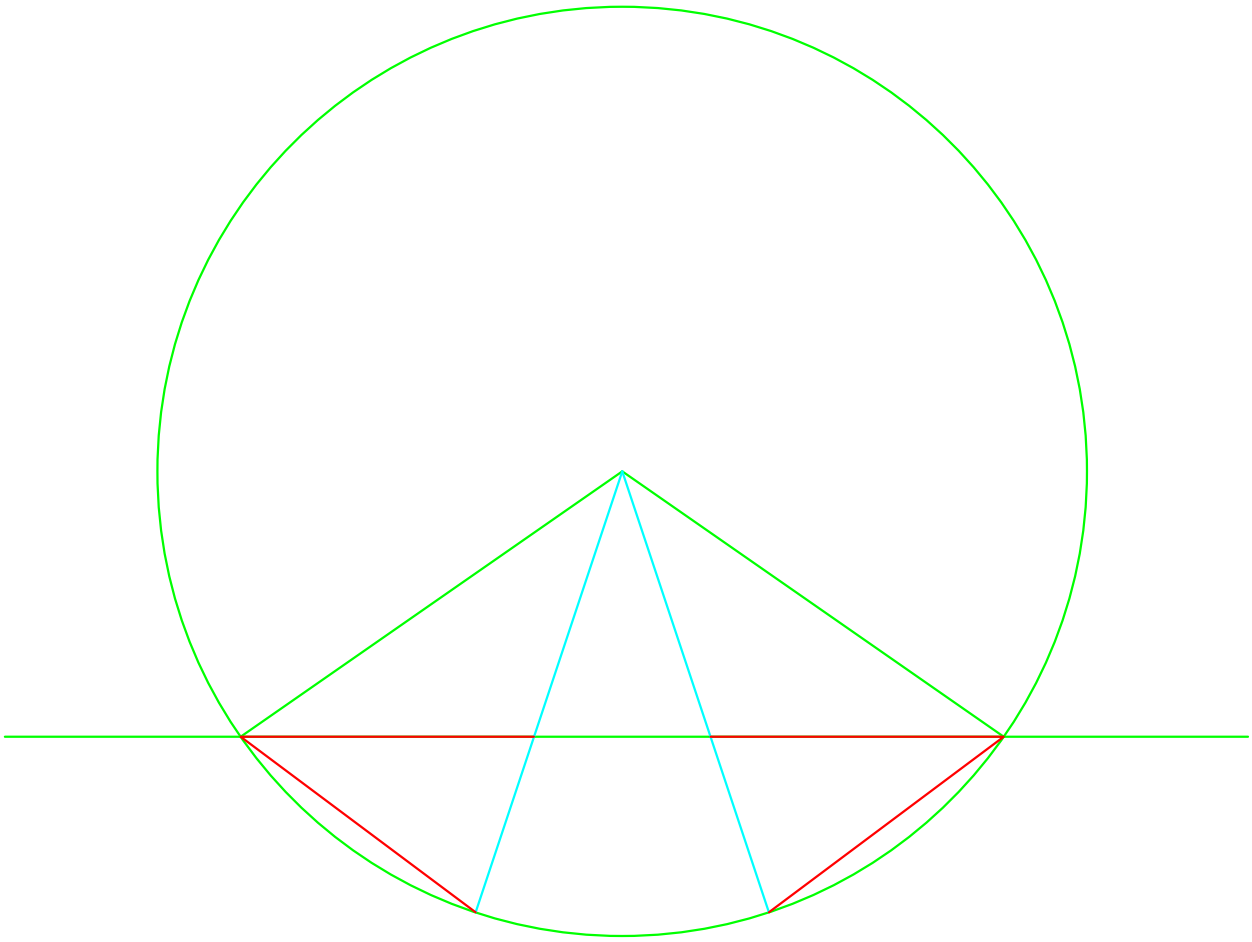
2012/12/05



蛭子井博孝

さまよえば一人
出会えれば二人
楽しめばみんな
去って行く今年
きっといい年だ

ありがとう



(HEX62)

数学日記　愛と理想　第 25 日

蛭子井博孝編著

１．シムソンの周辺定理

１．どれもみんなのパチクリ　ひょうたん

１．どれもみんなの点線円幾何学　115-2

１．Doval　第５定義の周辺定理

１．今日の俳句

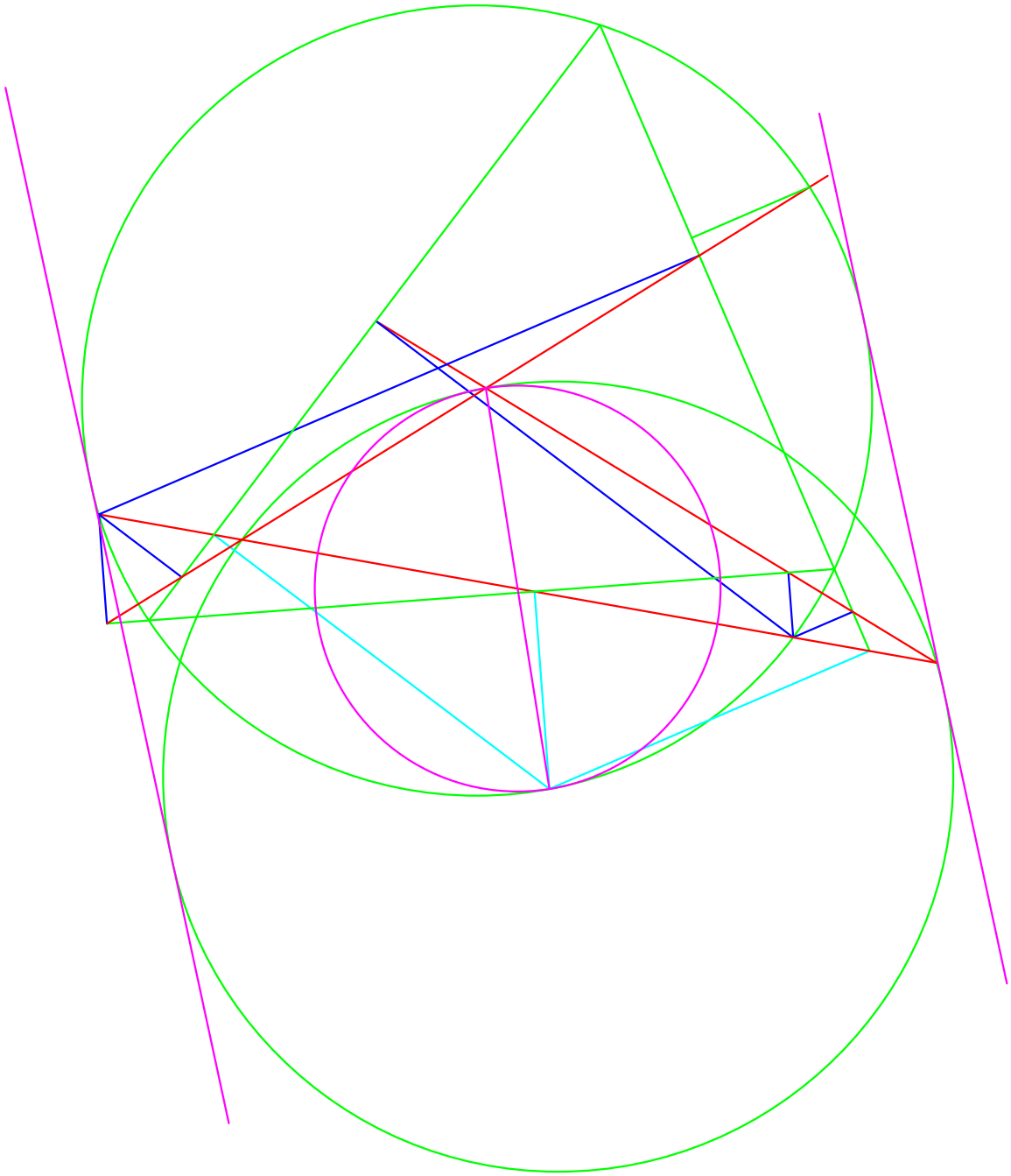
　　出会う友　君も命は　冬に咲く

１．基本問題　平行四辺形

１．　ひとつ

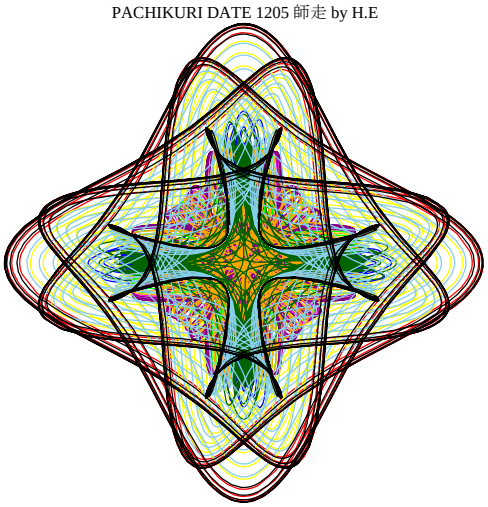
蛭子井のシムソン同直径定理

2012/12/05



蛭子井博孝

PACHIKURI DATE 1205 師走 by H.E



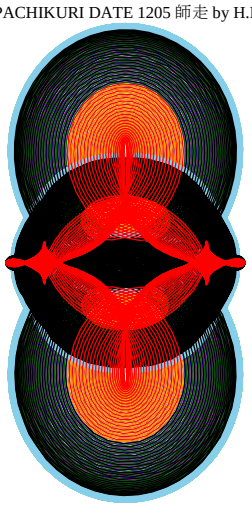
BGT = "12-05 (03:36:55 PM)", [70], HEB = [7, 5, 2]

$X = \sin(241\,t)^5 + \sin\left(\frac{1687}{5}\,t\right)\cos\left(\frac{482}{5}\,t\right)\sin(\tan(\cos(t)))$

$Y = \cos(241\,t)^5 + \cos\left(\frac{1687}{5}\,t\right)\cos\left(\frac{482}{5}\,t\right)\sin(\tan(\cos(t)))$

$\left[t = 0..2\,\pi,\ st = \frac{1}{10}\right]$, エビスイヒロタカ

PACHIKURI DATE 1205 師走 by H.E



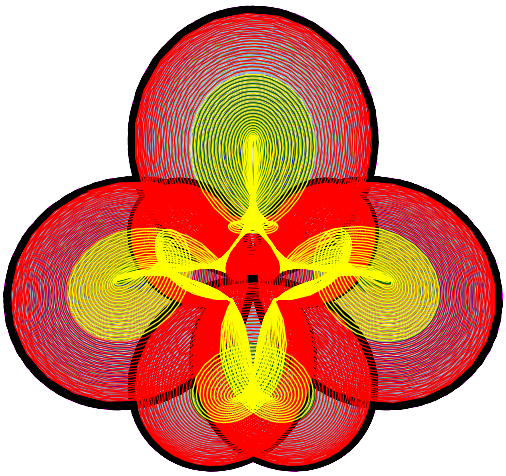
BGT = "12-05 (03:36:58 PM)", [71], HEB = [8, 1, 1]

$X = \sin(241\,t)^5 + \sin(1928\,t)\cos(241\,t)\cos(\tan(\cos(t)))$

$Y = \cos(241\,t)^5 + \cos(1928\,t)\cos(241\,t)\cos(\tan(\cos(t)))$

$\left[t = 0..2\,\pi,\ st = \frac{1}{10}\right]$, エビスイヒロタカ

PACHIKURI DATE 1205 師走 by H.E



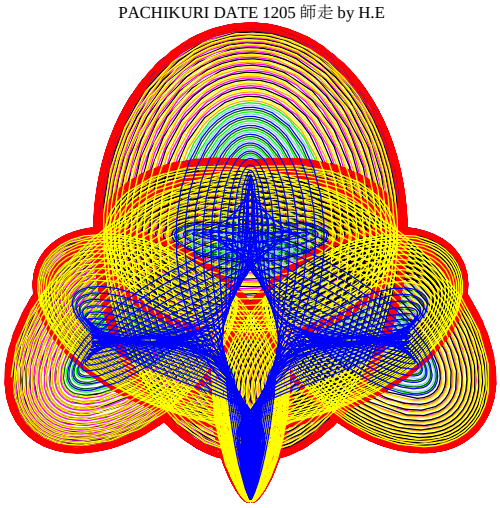
BGT = "12-05 (03:37:01 PM)", [72], HEB = [8, 1, 2]

$X = \sin(241\,t)^5 + \sin(1928\,t)\cos(482\,t)\cos(\tan(\cos(t)))$

$Y = \cos(241\,t)^5 + \cos(1928\,t)\cos(482\,t)\cos(\tan(\cos(t)))$

$\left[t = 0..2\,\pi,\ st = \frac{1}{10}\right]$, エビスイヒロタカ

PACHIKURI DATE 1205 師走 by H.E



BGT = "12-05 (03:37:03 PM)", [73], HEB = [8, 2, 1]

$X = \sin(241\,t)^5 + \sin(964\,t)\cos\left(\frac{241}{2}\,t\right)\cos(\tan(\cos(t)))$

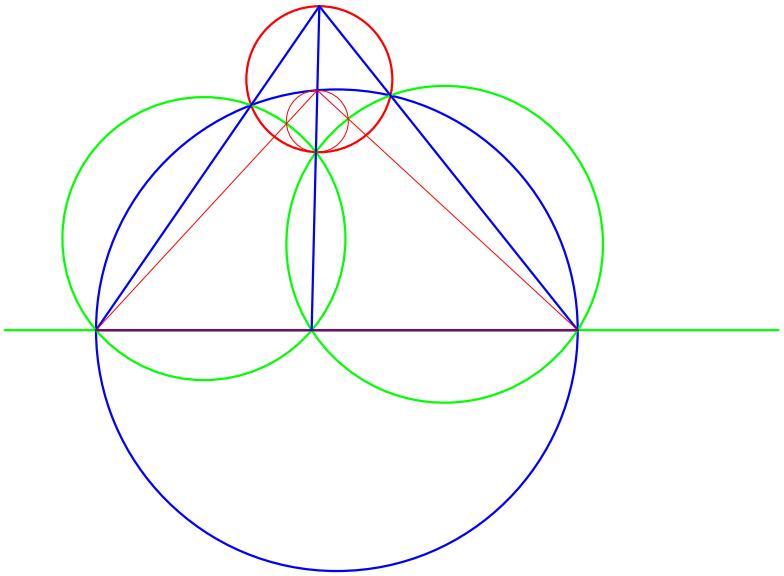
$Y = \cos(241\,t)^5 + \cos(964\,t)\cos\left(\frac{241}{2}\,t\right)\cos(\tan(\cos(t)))$

$\left[t = 0..2\,\pi,\ st = \frac{1}{10}\right]$, エビスイヒロタカ

HI-115-h-2

2円と直径円の共点共円定理

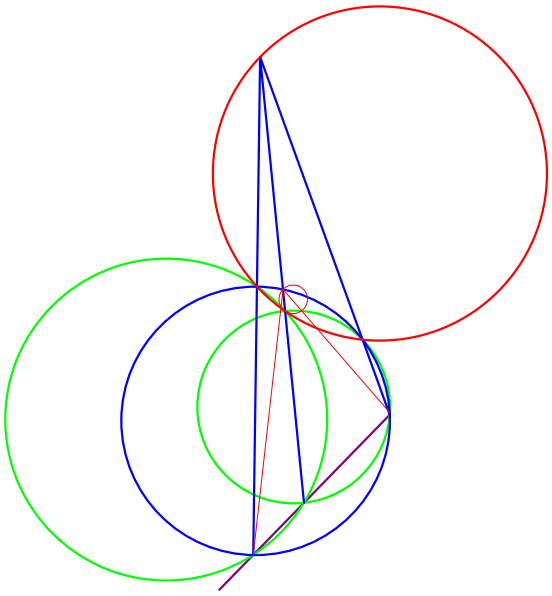
2008-2-2

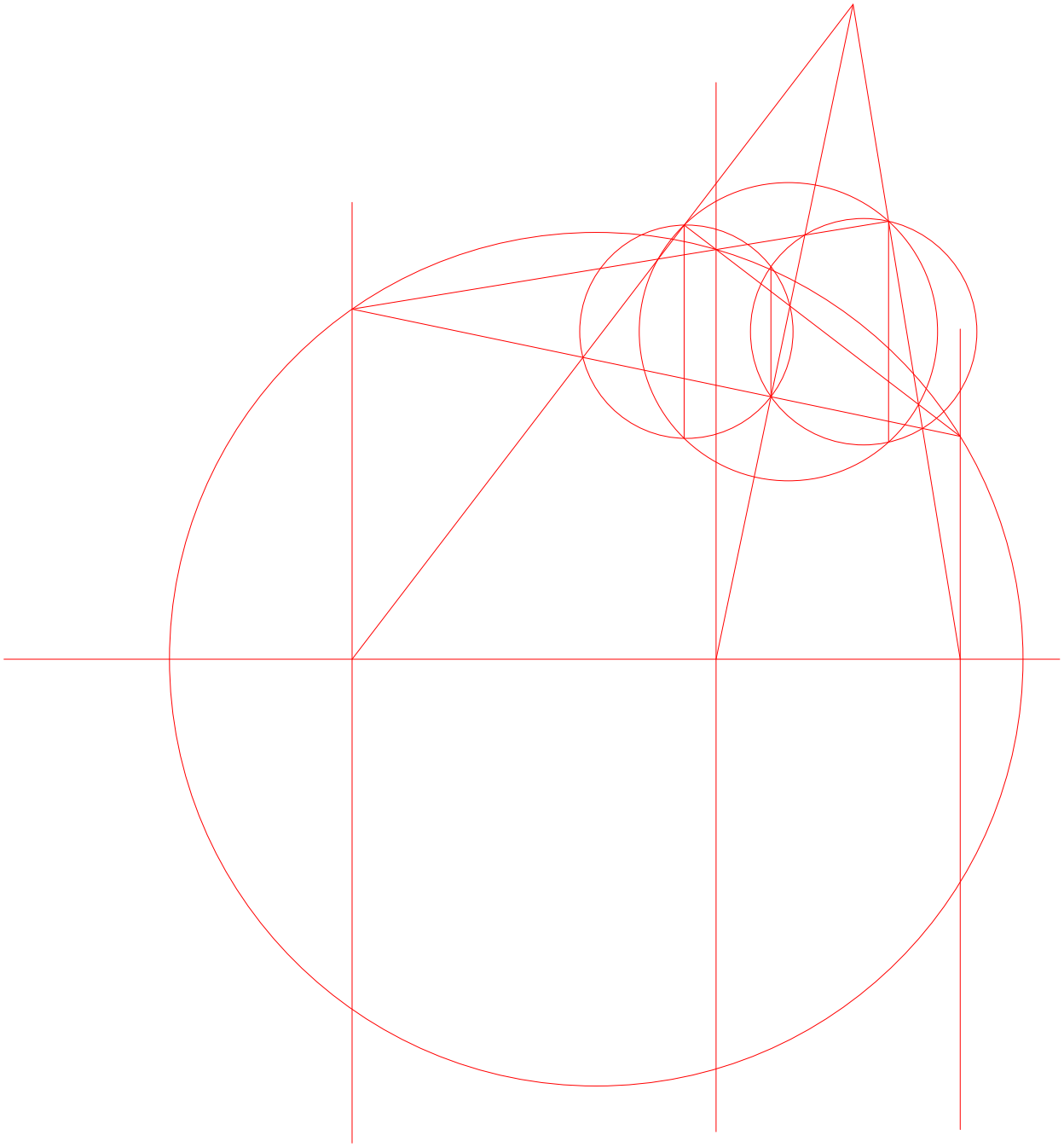


by 蛭子井博孝

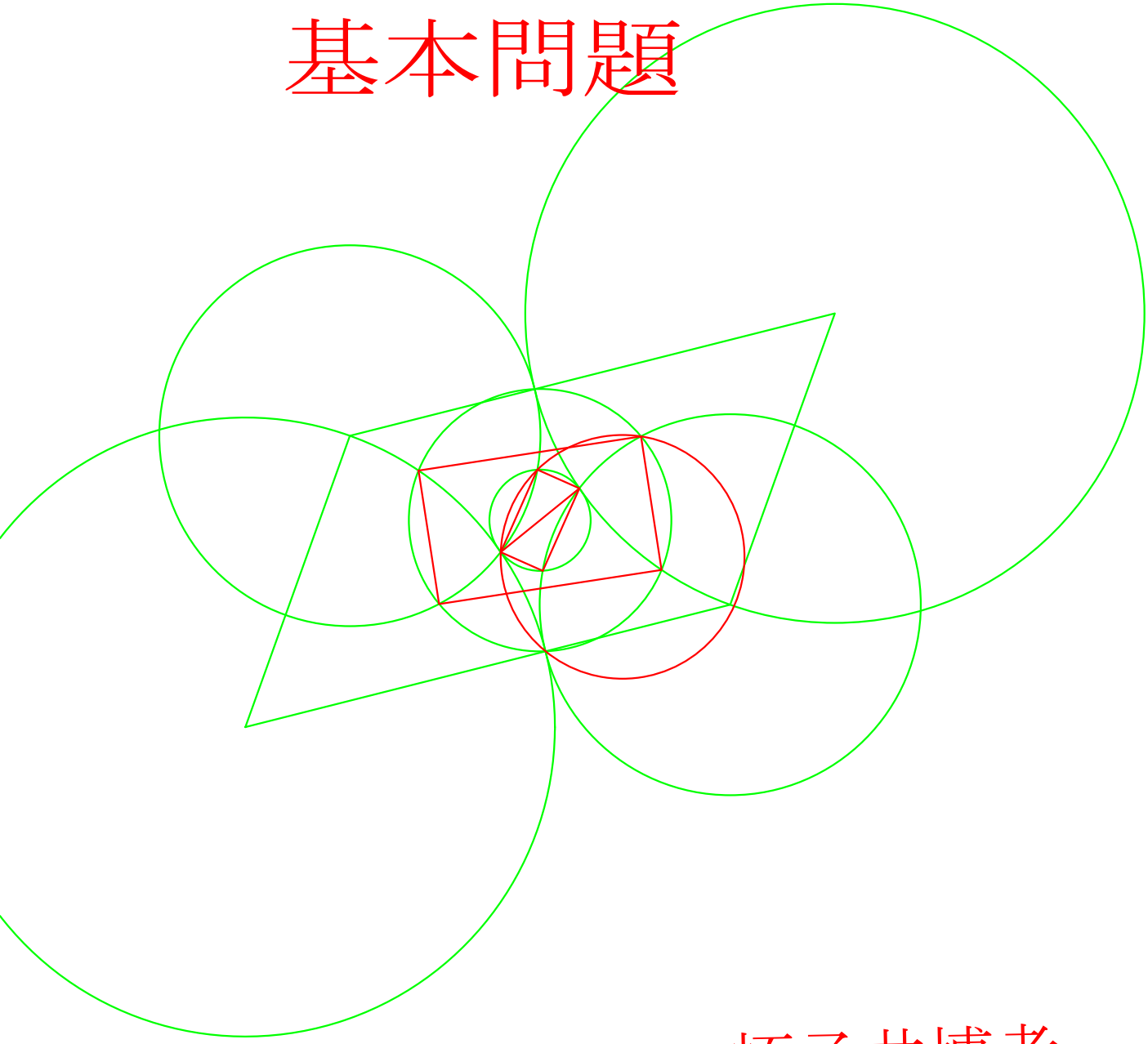
2012-12-5

2008-2-2





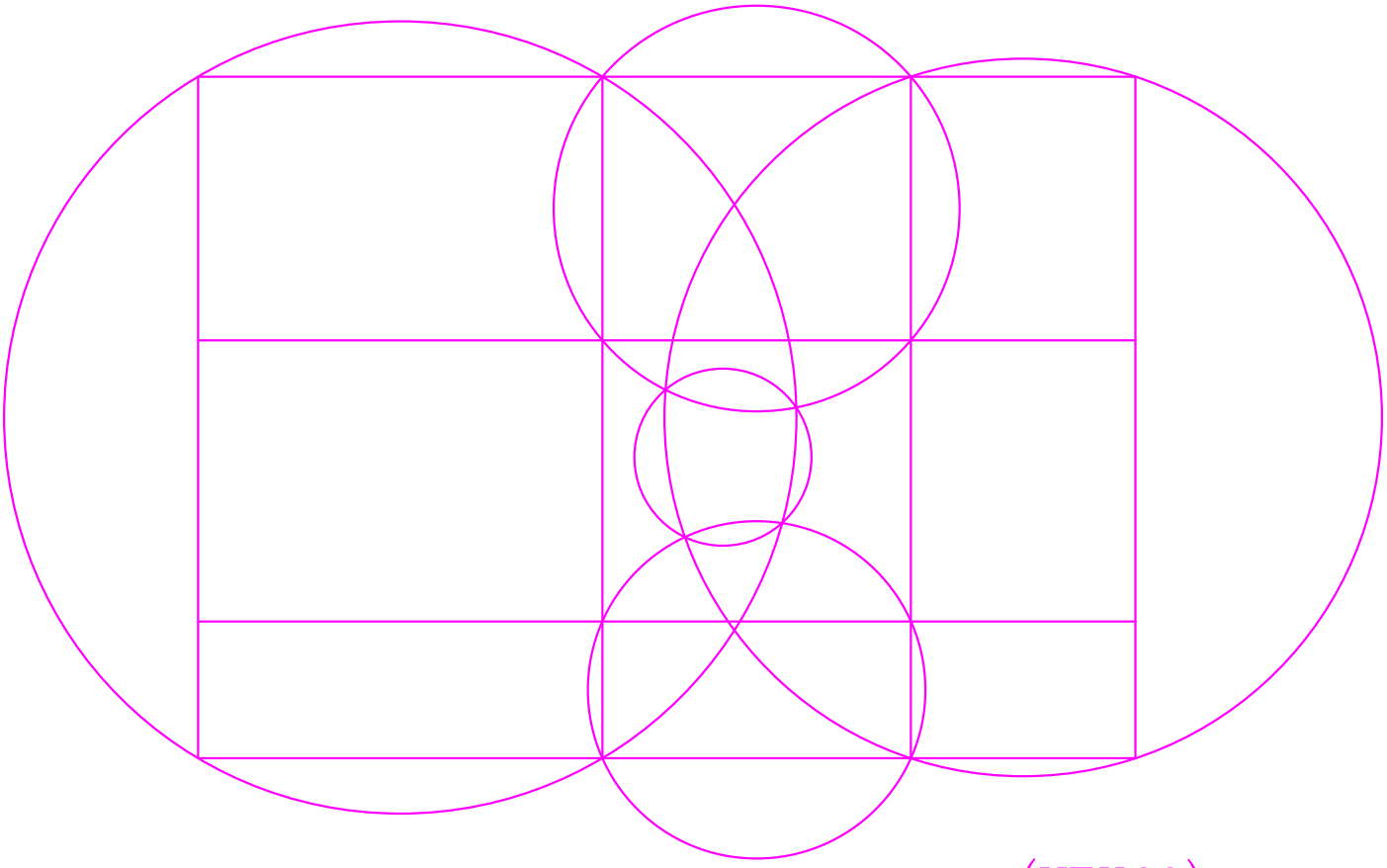
基本問題



蛭子井博孝

ドーナツ一つ
愛一つ
冬一つ
君一つ
円一つ

ありがとう



(HEX62)

数学日記　愛と理想　第26日

蛭子井博孝編著

１．歴史の周辺定理　　眠れる定理

１．どれもみんなのパチクリ　冬の慕情

１．どれもみんなの点線円幾何学　HI-２１３－２

１．微分方程式の解のグラフ

１．Dova　の周辺定理　基本垂線定理

１．今日の一句
空港の初日小春日笑みと笑み
初飛行ロビー小春日笑み出会い

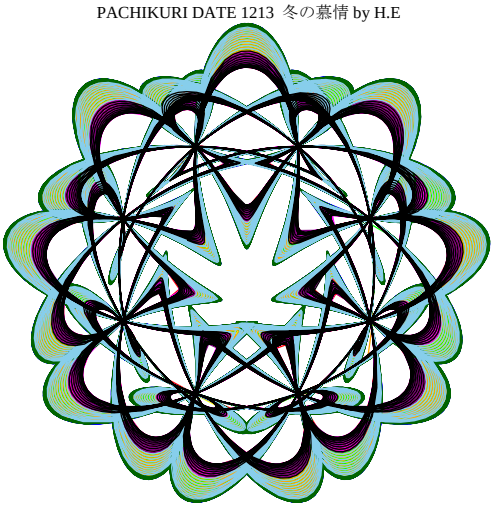
卵形線研究センター

http://wabi.de-blog.jp/

眠れる定理

ヘキサゴンモーレーは、
ヘキサゴン４等分の定理に拡張可

PACHIKURI DATE 1213 冬の慕情 by H.E



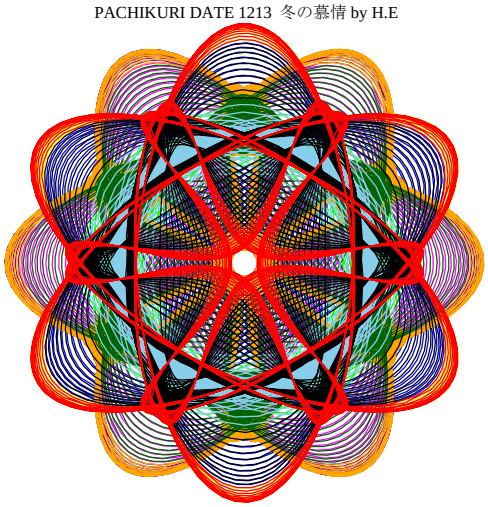
BGT = "12-13 (07:40:05 AM)", [60], HEB = [6, 5, 2]

$$X = \sin\left(\frac{1213}{2}\,t\right) + \sin\left(\frac{6065}{12}\,t\right)\cos(2426\,t)\,\sin(\cos(\cos(t)))$$

$$Y = \cos\left(\frac{1213}{2}\,t\right) + \cos\left(\frac{6065}{12}\,t\right)\cos(2426\,t)\,\sin(\cos(\cos(t)))$$

$$\left[t = 0\,..2\,\pi,\ st = \frac{1}{10}\right],\ エビスイヒロタカ$$

PACHIKURI DATE 1213 冬の慕情 by H.E



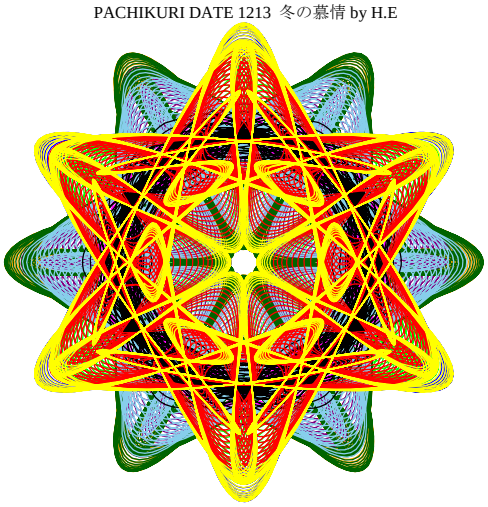
BGT = "12-13 (07:40:08 AM)", [61], HEB = [7, 1, 1]

$$X = \sin\left(\frac{8491}{12}\,t\right) + \sin\left(\frac{1213}{12}\,t\right)\cos(1213\,t)\,\sin(\tan(\sin(\cos(t))))$$

$$Y = \cos\left(\frac{8491}{12}\,t\right) + \cos\left(\frac{1213}{12}\,t\right)\cos(1213\,t)\,\sin(\tan(\sin(\cos(t))))$$

$$\left[t = 0\,..2\,\pi,\ st = \frac{1}{10}\right],\ エビスイヒロタカ$$

PACHIKURI DATE 1213 冬の慕情 by H.E



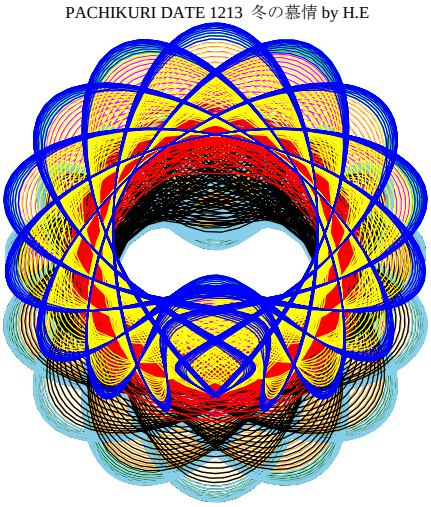
BGT = "12-13 (07:40:12 AM)", [62], HEB = [7, 1, 2]

$$X = \sin\left(\frac{8491}{12}\,t\right) + \sin\left(\frac{1213}{12}\,t\right)\cos(2426\,t)\,\sin(\tan(\sin(\cos(t))))$$

$$Y = \cos\left(\frac{8491}{12}\,t\right) + \cos\left(\frac{1213}{12}\,t\right)\cos(2426\,t)\,\sin(\tan(\sin(\cos(t))))$$

$$\left[t = 0\,..2\,\pi,\ st = \frac{1}{10}\right],\ エビスイヒロタカ$$

PACHIKURI DATE 1213 冬の慕情 by H.E



BGT = "12-13 (07:40:15 AM)", [63], HEB = [7, 2, 1]

$$X = \sin\left(\frac{8491}{12}\,t\right) + \sin\left(\frac{1213}{6}\,t\right)\cos(1213\,t)\,\sin(\tan(\sin(\cos(t))))$$

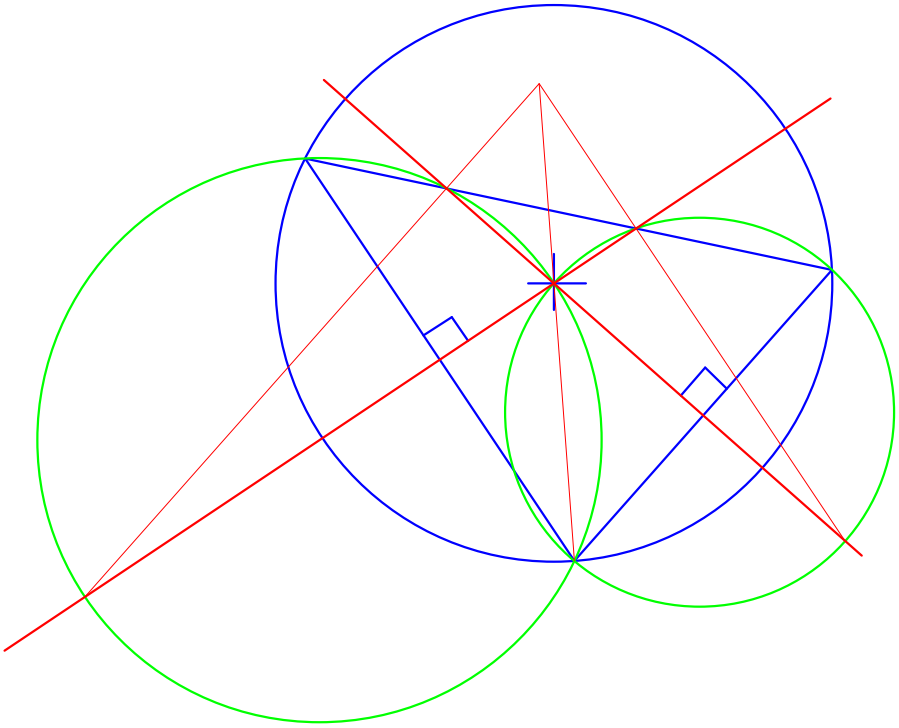
$$Y = \cos\left(\frac{8491}{12}\,t\right) + \cos\left(\frac{1213}{6}\,t\right)\cos(1213\,t)\,\sin(\tan(\sin(\cos(t))))$$

$$\left[t = 0\,..2\,\pi,\ st = \frac{1}{10}\right],\ エビスイヒロタカ$$

3-6 直交定理

HI-213-2

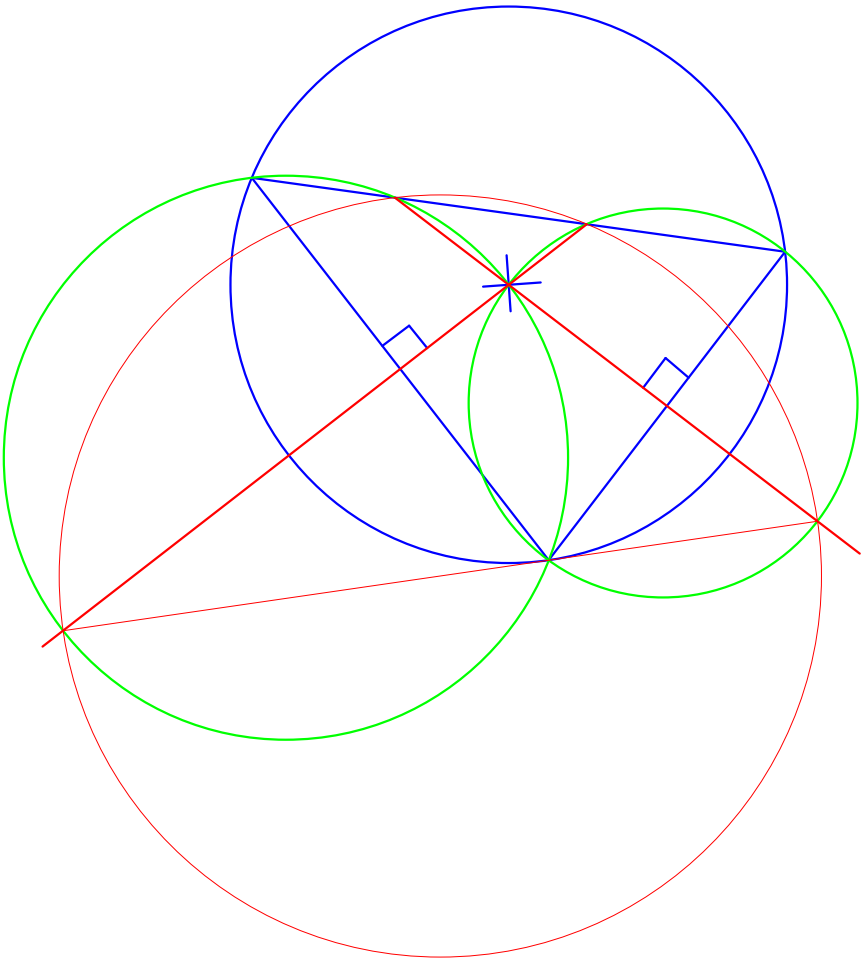
2008-3-6



蛭子井博孝

2012/12/13

2009-2-8



蛭子井博孝

```
> # DIFF function by H.E:
> with(plots) : with(StringTools) : FormatTime("%Y-%m-%d (%r)");
```

"2012-12-13 (10:02:21 AM)" **(1)**

```
> DFDD := dsolve(diff(y(x), x) + diff(diff(y(x), x), x) = y(x));
```

$$DFDD := y(x) = \_C1\, e^{\frac{1}{2}\left(\sqrt{5}-1\right)x} + \_C2\, e^{-\frac{1}{2}\left(\sqrt{5}+1\right)x} \quad \textbf{(2)}$$

```
> DDG := plot(e^(1/2*(sqrt(5)-1)*x) + e^(-1/2*(sqrt(5)+1)*x), x = 0..2*Pi, color = green);
```

$$DDG := PLOT(\ldots) \quad \textbf{(3)}$$

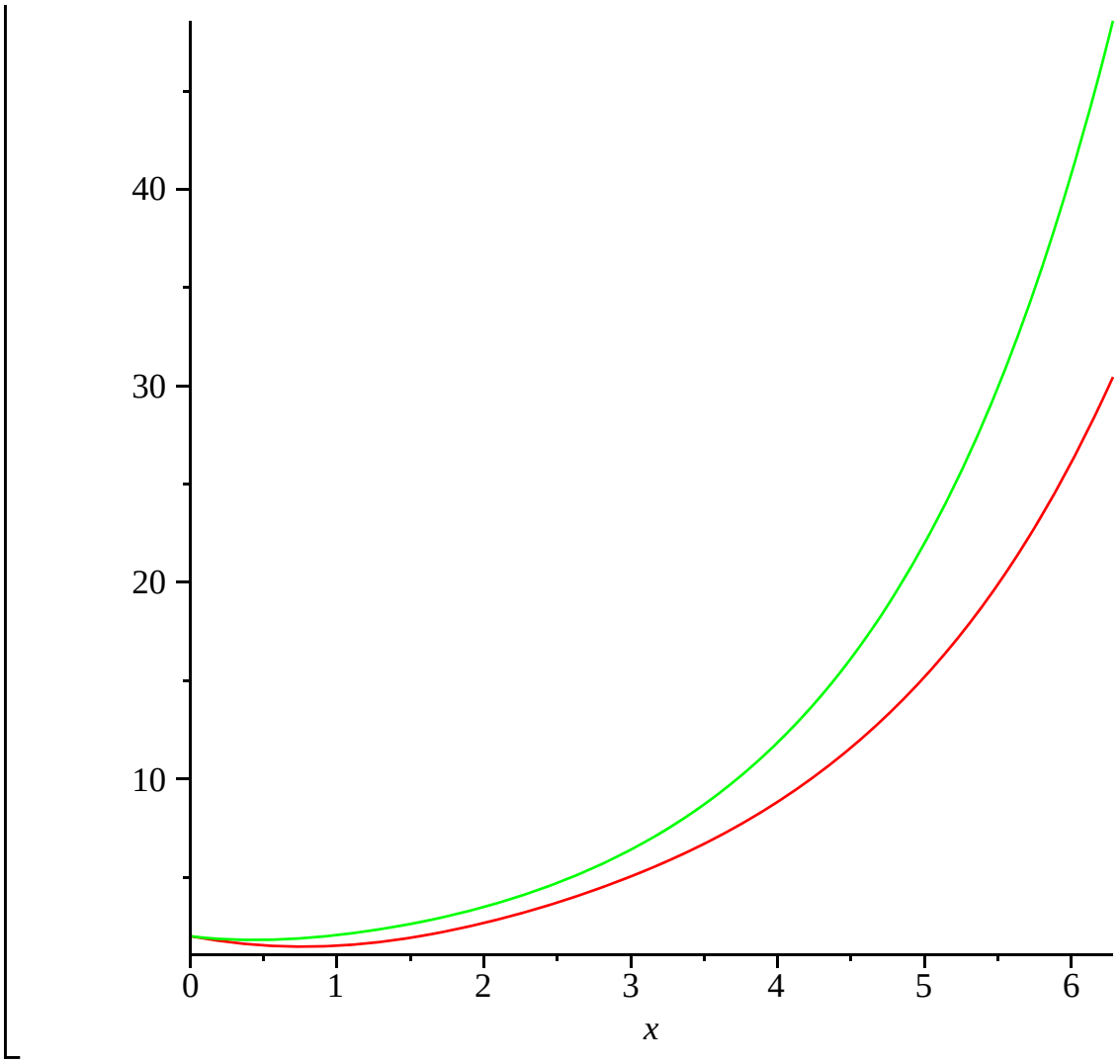
```
> DFDDFDDD := dsolve(diff(y(x), x) + diff(diff(y(x), x), x) + diff(diff(diff(y(x), x), x), x) = y(x));
```

$$DFDDFDDD := y(x) = \_C1\, e^{\frac{1}{3}\frac{\left(\left(17+3\sqrt{33}\right)^{2/3}-2-\left(17+3\sqrt{33}\right)^{1/3}\right)x}{\left(17+3\sqrt{33}\right)^{1/3}}} + \_C2\, e^{-\frac{1}{6}\frac{\left(\left(17+3\sqrt{33}\right)^{2/3}-2+2\left(17+3\sqrt{33}\right)^{1/3}\right)x}{\left(17+3\sqrt{33}\right)^{1/3}}} \sin\left(\frac{1}{6}\frac{1}{\left(17+3\sqrt{33}\right)^{1/3}}\left(\left(\sqrt{3}\left(17+3\sqrt{33}\right)^{2/3}+2\sqrt{3}\right)x\right)\right) + \_C3\, e^{-\frac{1}{6}\frac{\left(\left(17+3\sqrt{33}\right)^{2/3}-2+2\left(17+3\sqrt{33}\right)^{1/3}\right)x}{\left(17+3\sqrt{33}\right)^{1/3}}} \cos\left(\frac{1}{6}\frac{1}{\left(17+3\sqrt{33}\right)^{1/3}}\left(\left(\sqrt{3}\left(17+3\sqrt{33}\right)^{2/3}+2\sqrt{3}\right)x\right)\right) \quad \textbf{(4)}$$

```
> DDDG := plot(e^(1/3*((17+3*sqrt(33))^(2/3)-2-(17+3*sqrt(33))^(1/3))*x/(17+3*sqrt(33))^(1/3))
  - e^(-1/6*((17+3*sqrt(33))^(2/3)-2+2*(17+3*sqrt(33))^(1/3))*x/(17+3*sqrt(33))^(1/3))
  *sin(1/6/(17+3*sqrt(33))^(1/3)*((sqrt(3)*(17+3*sqrt(33))^(2/3)+2*sqrt(3))*x))
  + e^(-1/6*((17+3*sqrt(33))^(2/3)-2+2*(17+3*sqrt(33))^(1/3))*x/(17+3*sqrt(33))^(1/3))
  *cos(1/6/(17+3*sqrt(33))^(1/3)*((sqrt(3)*(17+3*sqrt(33))^(2/3)+2*sqrt(3))*x)), x = 0..2*Pi, color = red);
```

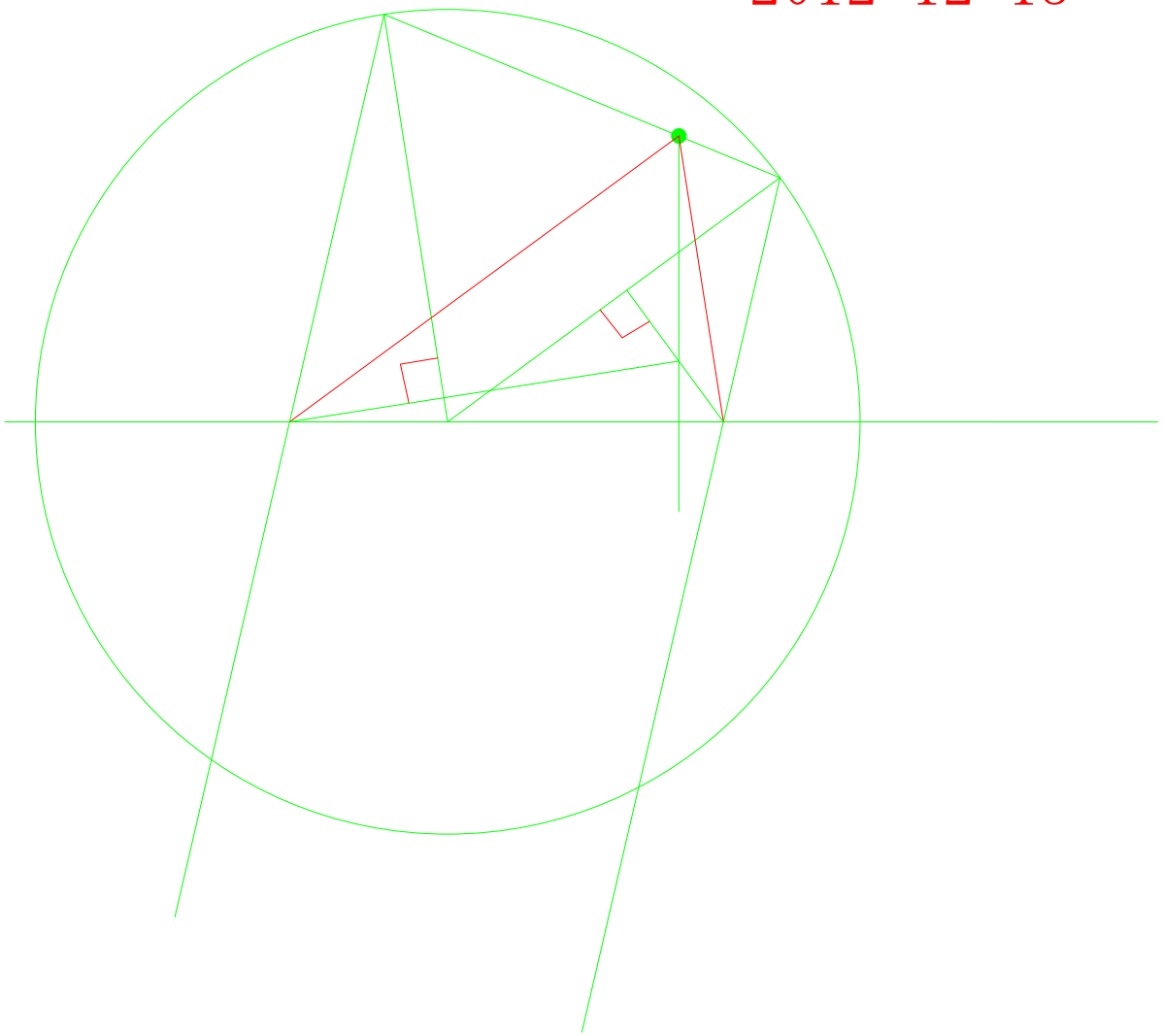
$$DDDG := PLOT(\ldots) \quad \textbf{(5)}$$

```
> print(display({DDG, DDDG}));
```


40
30
20
10
0
1
2
3
4
5
6
x

Doval　の周辺定理　垂心パップス定理

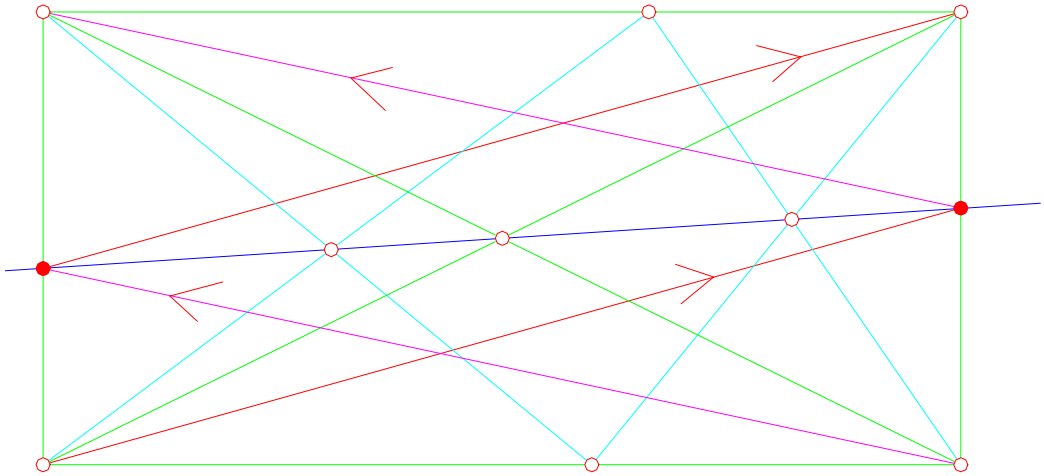
2012-12-13



蛭子井博孝

ありがとう

岩国錦帯橋空港開港記念



KRPP

（HEX62）)

数学日記　愛と理想　第27日

”正三角形”

そのシンプルさと奥深さ

蛭子井博孝編著

1．歴史上の定理の周辺　　ナポレオン第 2 正三角形 1:5 Regular Hexagon Theorem

1．どれもみんなの pachikuri　　雲海の慕情

1．どれもみんなの点線円幾何学　　220-2

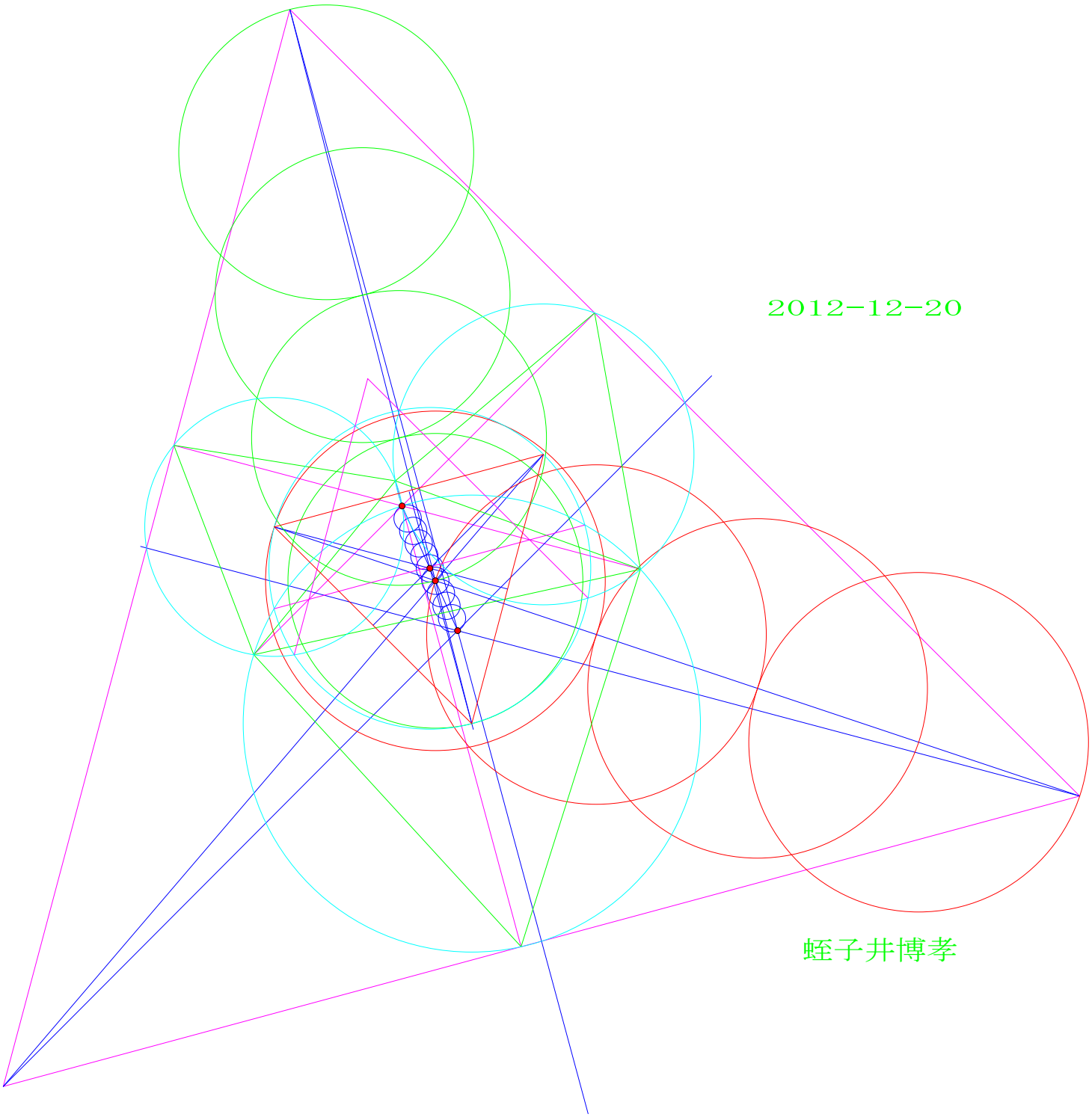
1．Doval の周辺定理

1. 基本定理

1. 今日の一句
　　君いずこ真摯な思い寒き夜

1．ありがとうの定理

EN3T60T1T4a1T5

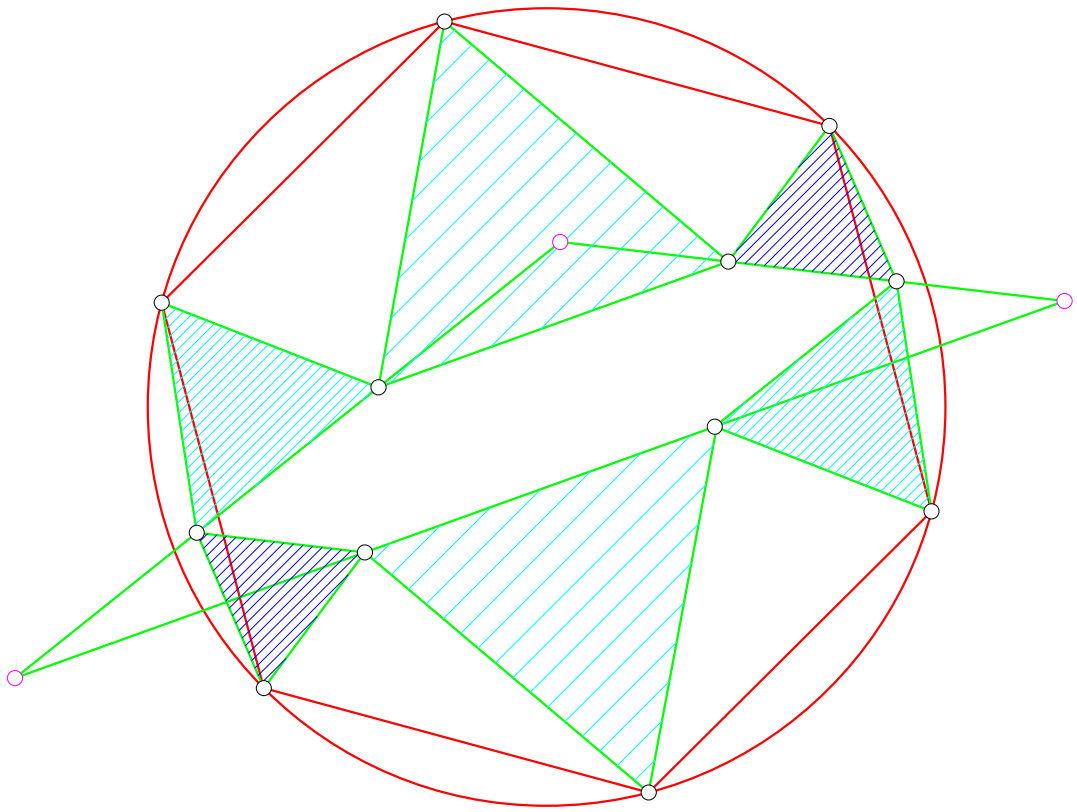


2012−12−20

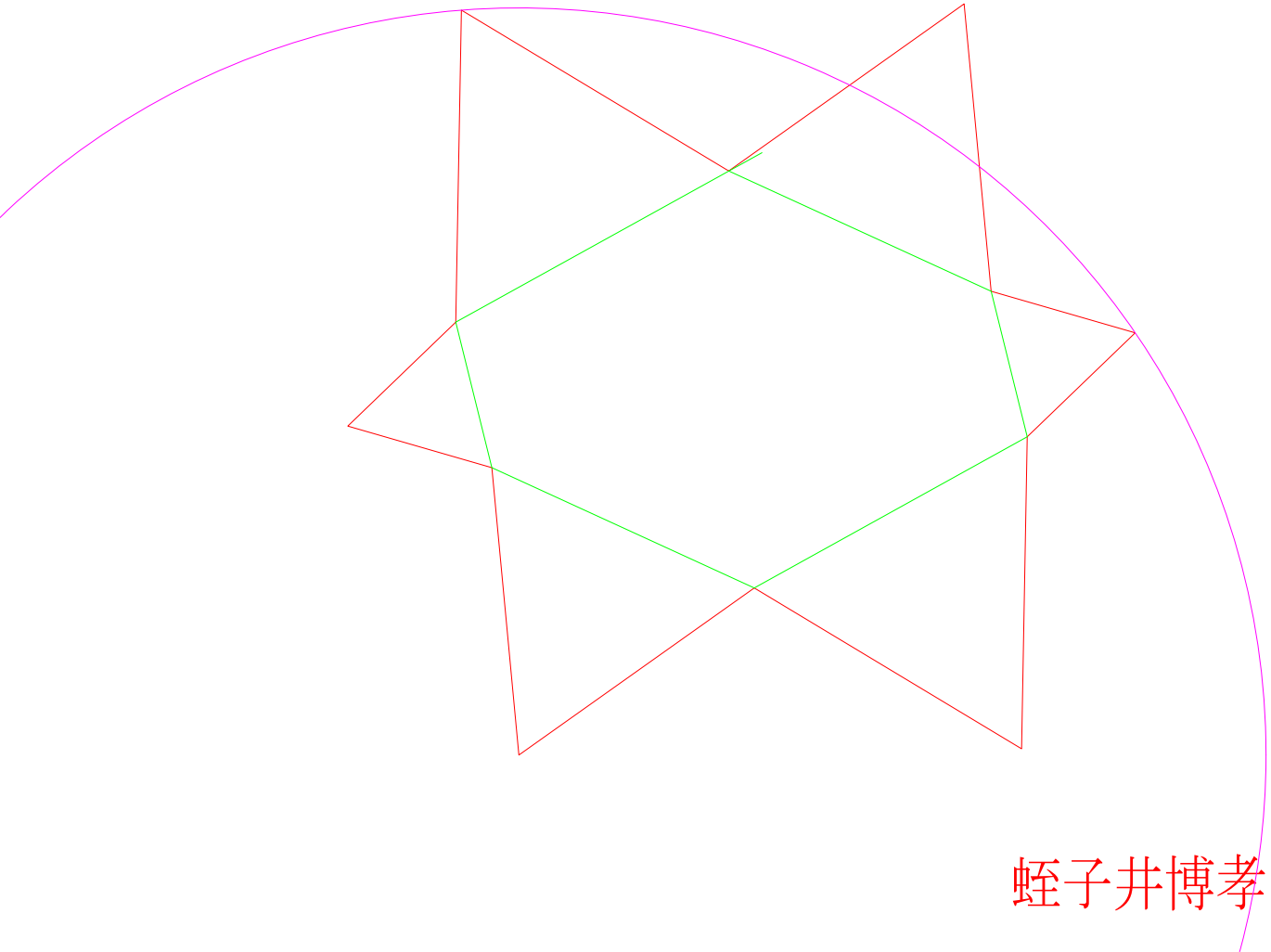
蛭子井博孝

ありがとう数学の女神さん男神さん

努力を馬鹿にしないでね



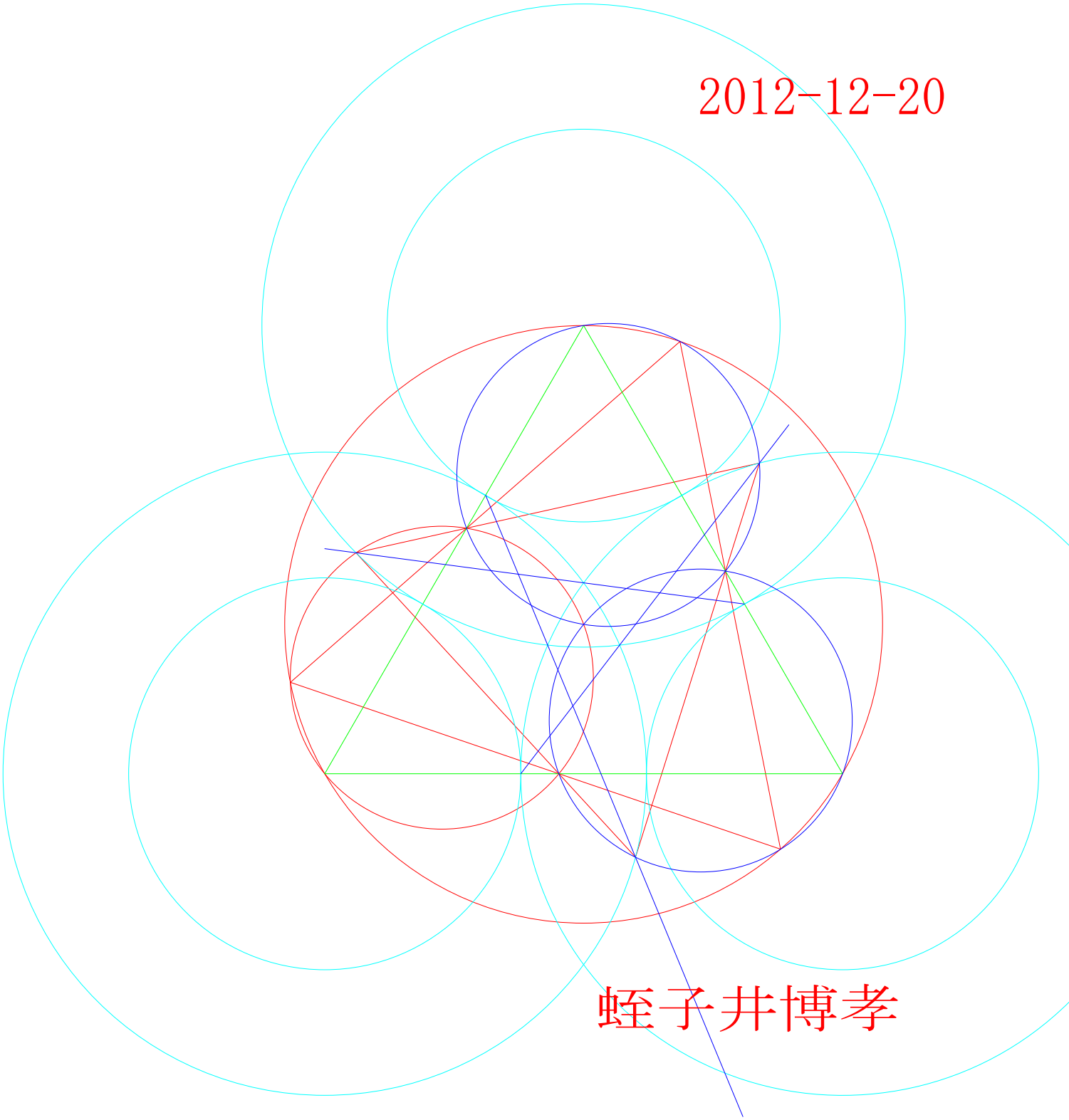
辺三等分正三角形が作る正6角形(regular　Hexagon)の定理



蛭子井博孝

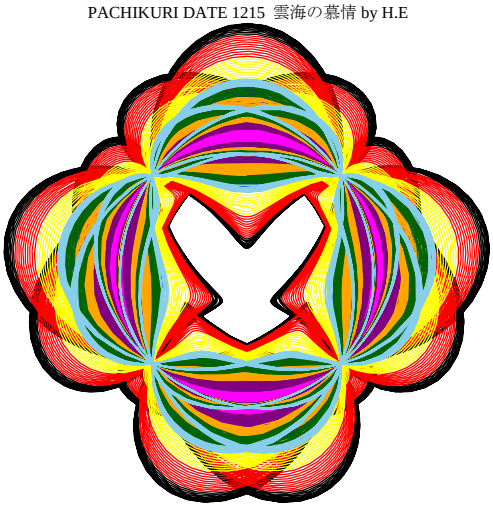
正三角形で遊ぶ

2012-12-20



蛭子井博孝

PACHIKURI DATE 1215 雲海の慕情 by H.E



BGT = "12-16 (02:23:06 AM)", [59], HEB = [6, 5, 1]

$$X = \sin\left(\frac{1215}{2}\,t\right) + \sin\left(\frac{2025}{4}\,t\right)\cos(1215\,t)\,\sin\left(\cos\left(\frac{3\,t}{3+t}\right)\right)$$

$$Y = \cos\left(\frac{1215}{2}\,t\right) + \cos\left(\frac{2025}{4}\,t\right)\cos(1215\,t)\,\sin\left(\cos\left(\frac{3\,t}{3+t}\right)\right)$$

$$\left[t = 0\,..2\,\pi,\ st = \frac{1}{10}\right],\ エビスイヒロタカ$$

PACHIKURI DATE 1215 雲海の慕情 by H.E

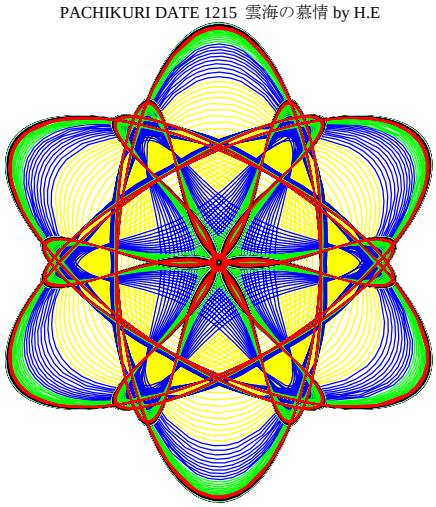
BGT = "12-16 (02:23:09 AM)", [60], HEB = [6, 5, 2]

$$X = \sin\left(\frac{1215}{2}\,t\right) + \sin\left(\frac{2025}{4}\,t\right)\cos(2430\,t)\,\sin\left(\cos\left(\frac{3\,t}{3+t}\right)\right)$$

$$Y = \cos\left(\frac{1215}{2}\,t\right) + \cos\left(\frac{2025}{4}\,t\right)\cos(2430\,t)\,\sin\left(\cos\left(\frac{3\,t}{3+t}\right)\right)$$

$$\left[t = 0\,..2\,\pi,\ st = \frac{1}{10}\right],\ エビスイヒロタカ$$

PACHIKURI DATE 1215 雲海の慕情 by H.E



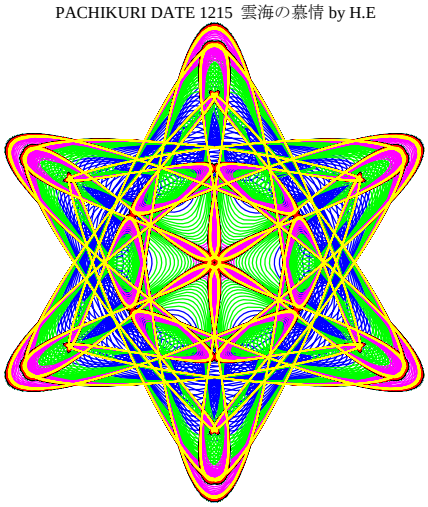
BGT = "12-16 (02:23:12 AM)", [61], HEB = [7, 1, 1]

$$X = \sin\left(\frac{2835}{4}\,t\right) + \sin\left(\frac{405}{4}\,t\right)\cos(1215\,t)\,\sin\left(\tan\left(\sin\left(\frac{3\,t}{3+t}\right)\right)\right)$$

$$Y = \cos\left(\frac{2835}{4}\,t\right) + \cos\left(\frac{405}{4}\,t\right)\cos(1215\,t)\,\sin\left(\tan\left(\sin\left(\frac{3\,t}{3+t}\right)\right)\right)$$

$$\left[t = 0\,..2\,\pi,\ st = \frac{1}{10}\right],\ エビスイヒロタカ$$

PACHIKURI DATE 1215 雲海の慕情 by H.E



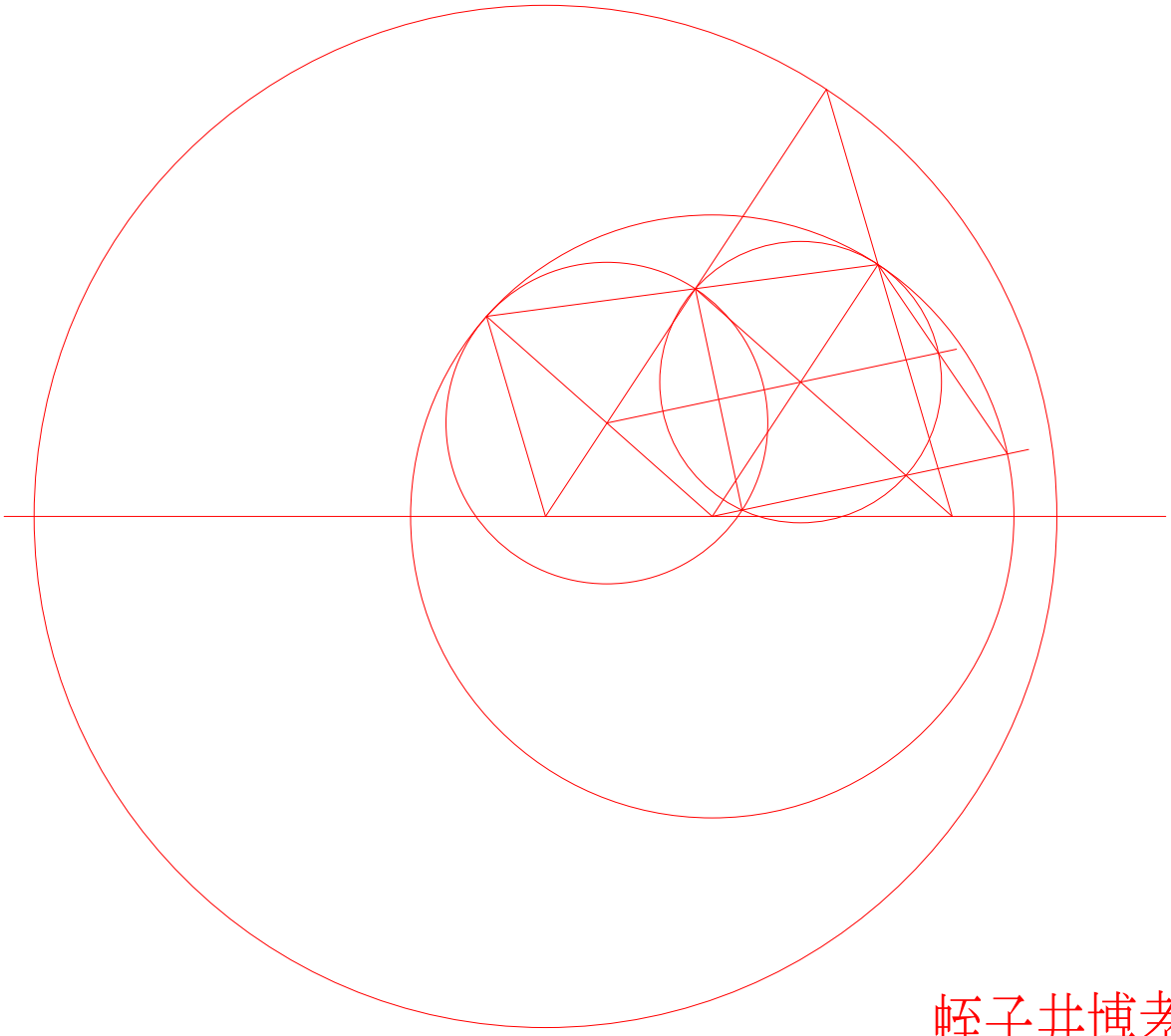
BGT = "12-16 (02:23:16 AM)", [62], HEB = [7, 1, 2]

$$X = \sin\left(\frac{2835}{4}\,t\right) + \sin\left(\frac{405}{4}\,t\right)\cos(2430\,t)\,\sin\left(\tan\left(\sin\left(\frac{3\,t}{3+t}\right)\right)\right)$$

$$Y = \cos\left(\frac{2835}{4}\,t\right) + \cos\left(\frac{405}{4}\,t\right)\cos(2430\,t)\,\sin\left(\tan\left(\sin\left(\frac{3\,t}{3+t}\right)\right)\right)$$

$$\left[t = 0\,..2\,\pi,\ st = \frac{1}{10}\right],\ エビスイヒロタカ$$

Dovalの第一定義の周辺



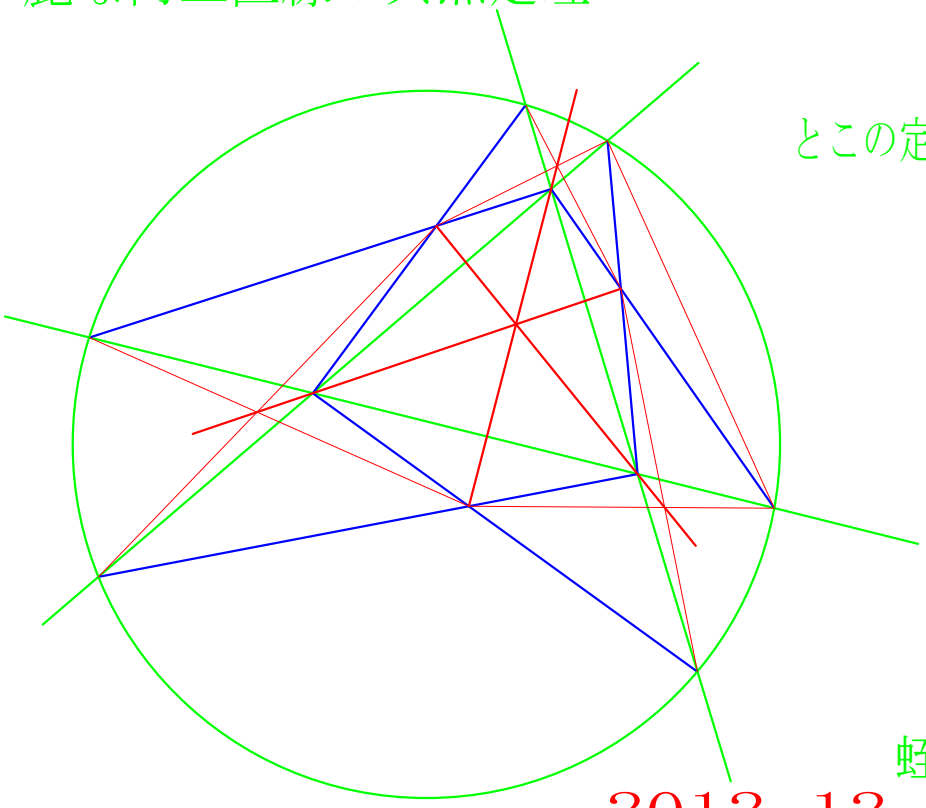
蛭子井博孝

HI-220−2

華麗な円三直線の共点定理

2008−5−18

とこの定理の内部版

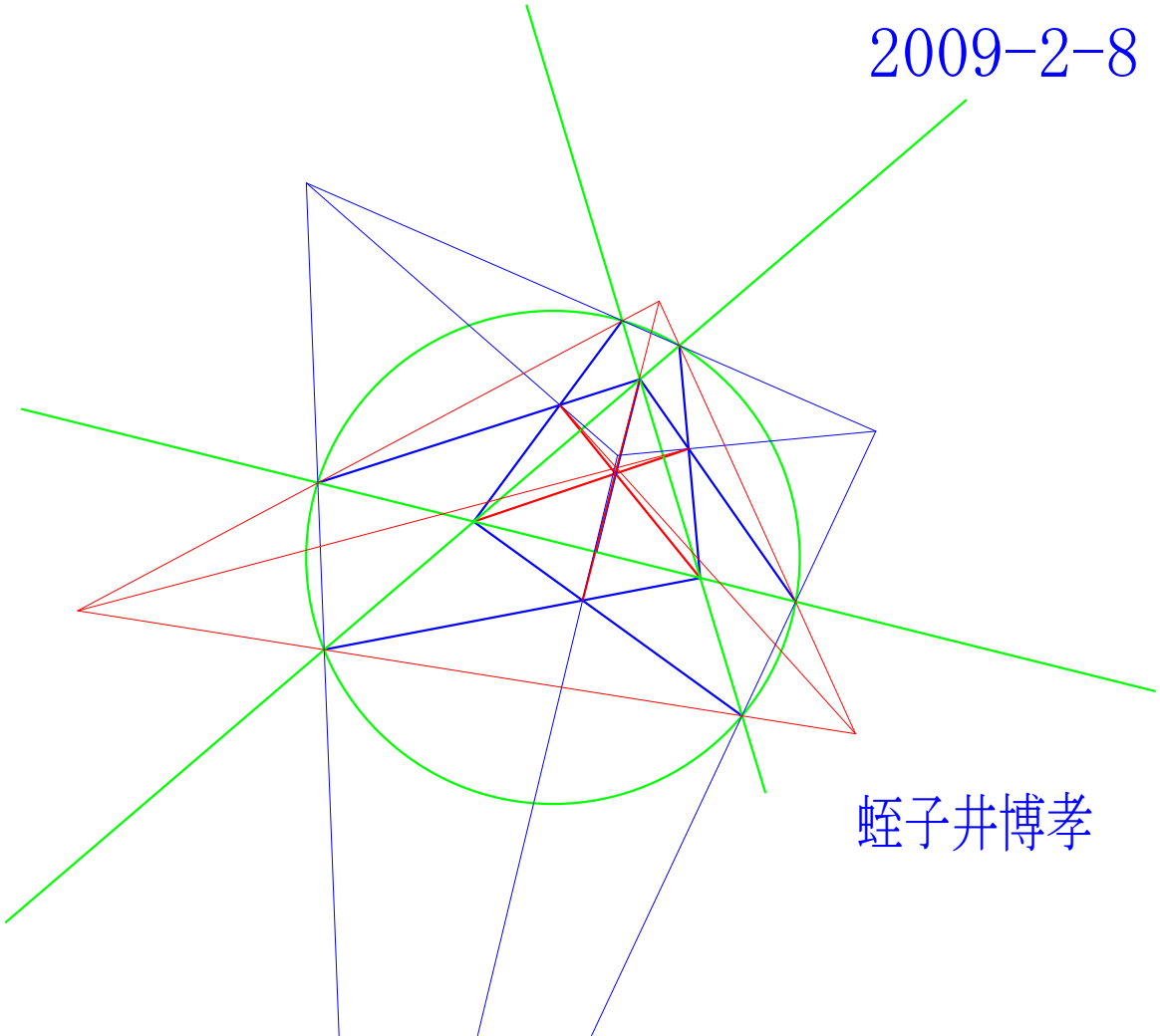


蛭子井博孝

2012−12−20

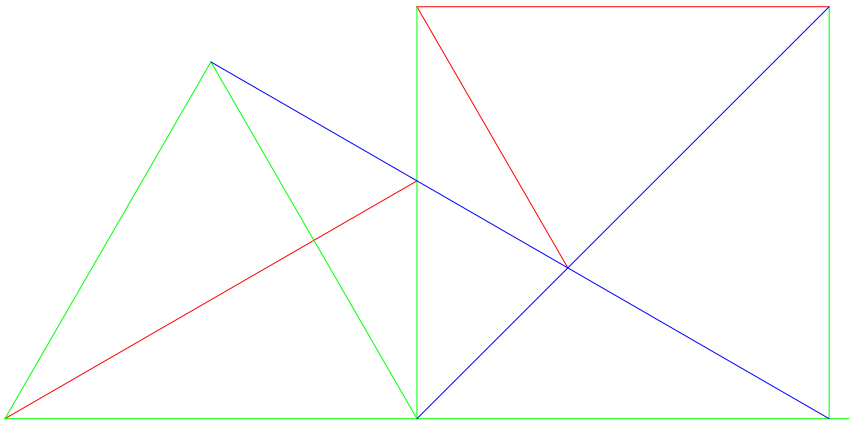
些細な追加、でも、やっと

2009−2−8



蛭子井博孝

ありがとう



(HEX62)

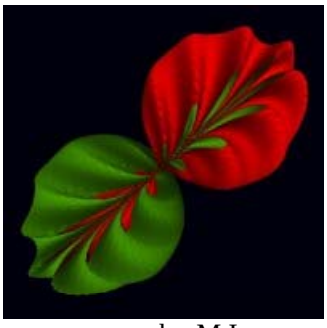
数学日記

geoMathe Diary28th

IDEAL and Passion No.1

by Hirotaka Ebisui and Maria Intagliata

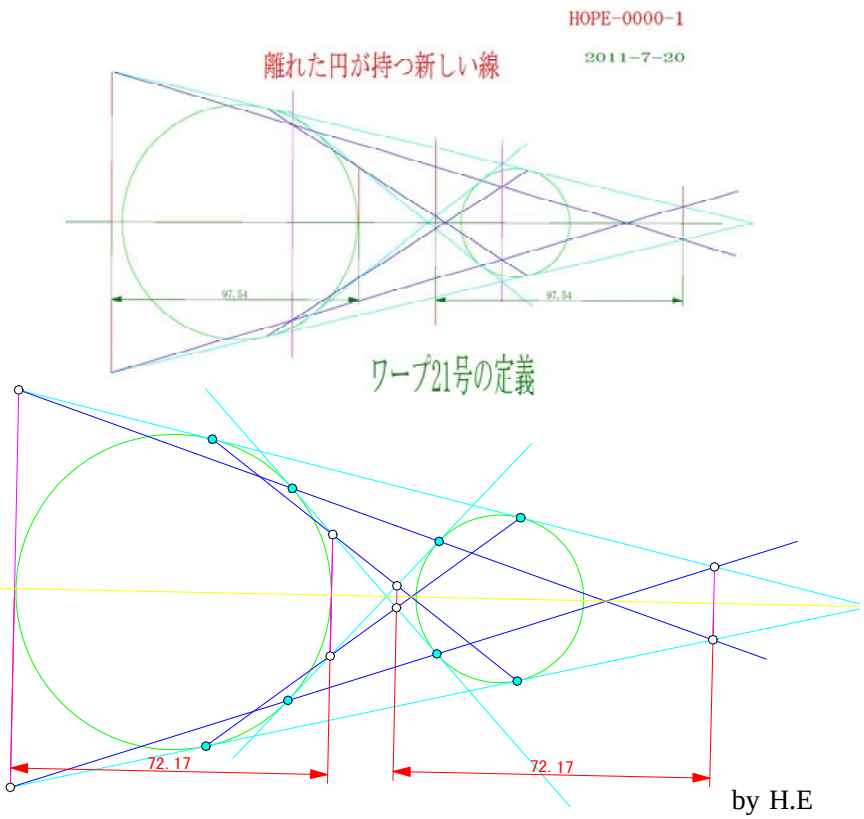
first leaves



by M.I

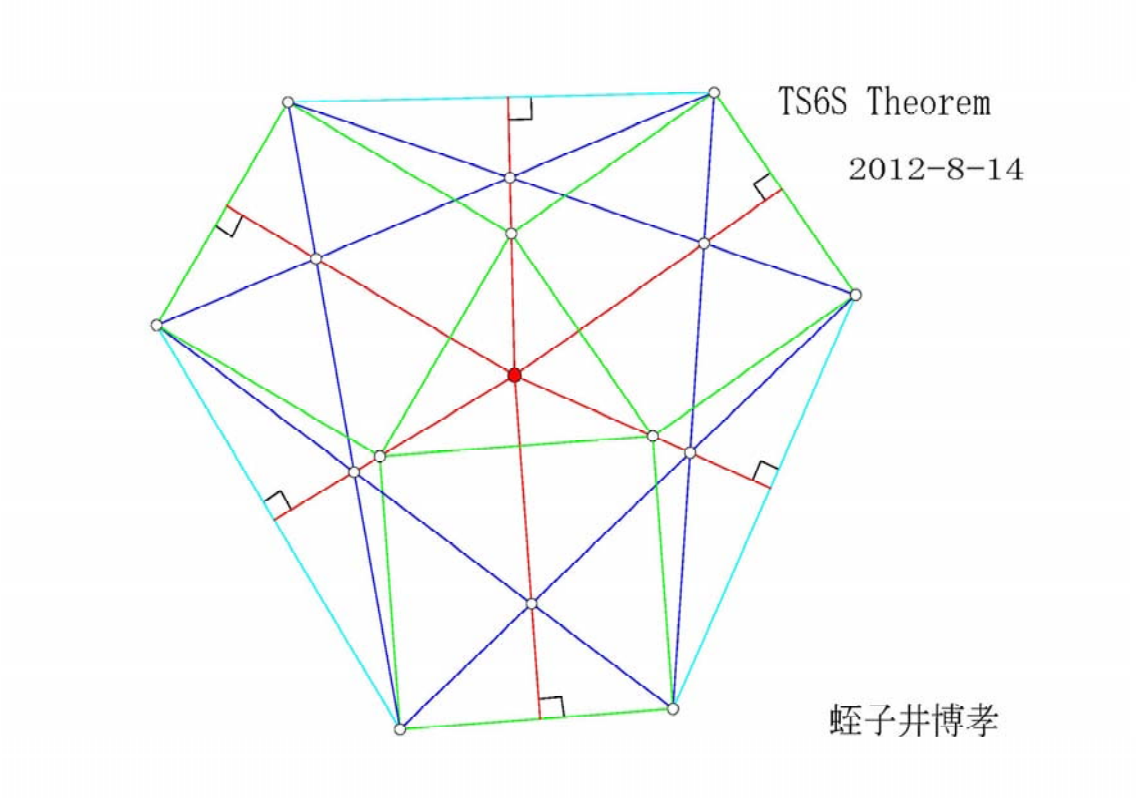
We think some things about mathe, therefore this gMD exsits for all.
We enjoy every things in this diary, and thanks your shareing of this gMD

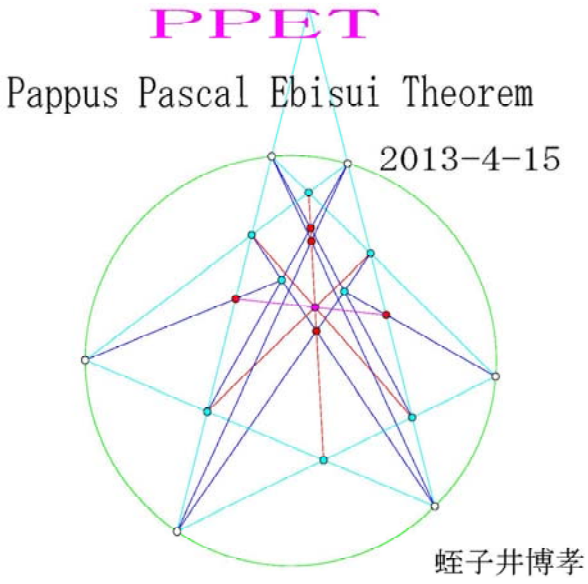
by H.E



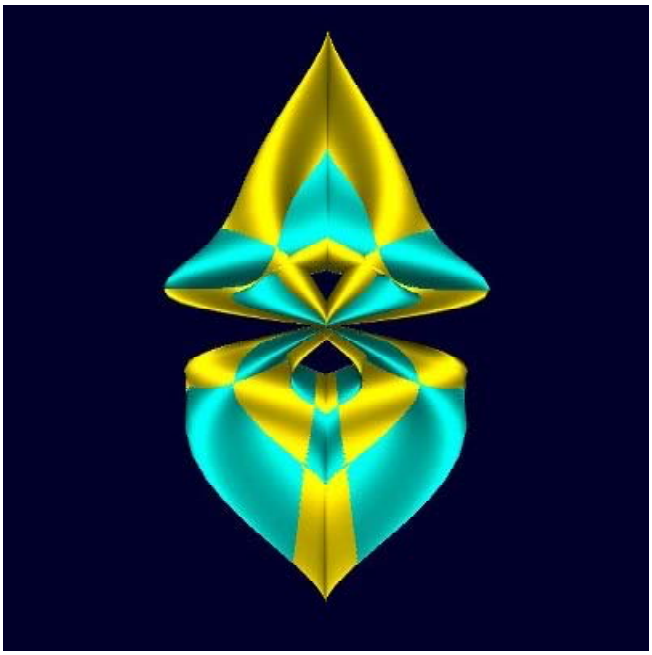
by H.E

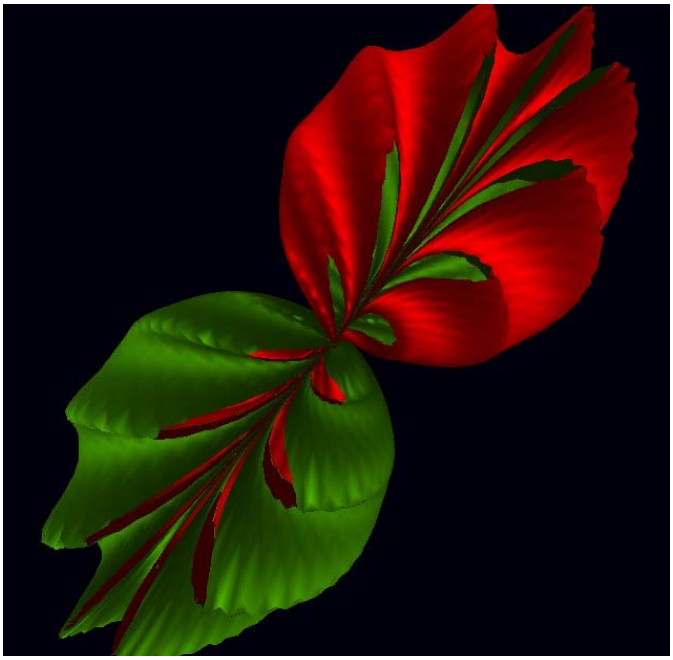
卵形線研究センター http://hoval.blogzine.jp/ 2013-4-20：rv4-21


TS6S Theorem
2012-8-14
蛭子井博孝


PPET
Pappus Pascal Ebisui Theorem
2013-4-15
蛭子井博孝

3 D by Maria Intagliata





```
> #M H number Analysis by H.E:
> c := 0 :for h from 1 to 8 do for e from h + 1 to 5 do for m from e + 1 to 13 do if m^(h+e)
  = (h + e)^m then c := c + 1 : print(E^(H+M) = (H + M)^E, [H, M, E](c) = [h, m, e]) fi:od:
  od:od:
```

$$E^{H+M} = (H+M)^E,\ [H(1), M(1), E(1)] = [1, 3, 2]$$
$$E^{H+M} = (H+M)^E,\ [H(2), M(2), E(2)] = [1, 4, 3]$$
$$E^{H+M} = (H+M)^E,\ [H(3), M(3), E(3)] = [1, 5, 4]$$
$$E^{H+M} = (H+M)^E,\ [H(4), M(4), E(4)] = [1, 6, 5]$$
$$E^{H+M} = (H+M)^E,\ [H(5), M(5), E(5)] = [2, 5, 3]$$
$$E^{H+M} = (H+M)^E,\ [H(6), M(6), E(6)] = [2, 6, 4]$$
$$E^{H+M} = (H+M)^E,\ [H(7), M(7), E(7)] = [2, 7, 5]$$
$$E^{H+M} = (H+M)^E,\ [H(8), M(8), E(8)] = [3, 7, 4]$$
$$E^{H+M} = (H+M)^E,\ [H(9), M(9), E(9)] = [3, 8, 5]$$
$$E^{H+M} = (H+M)^E,\ [H(10), M(10), E(10)] = [4, 9, 5] \quad (1)$$

```
> c := 0 :for h from 1 to 8 do for e from h + 1 to 5 do for m from e + 1 to 13 do if h^e + e^m
  + m^h = e^h + m^e + h^m then c := c + 1 : print(H^E + E^M + M^H = E^H + M^E + H^M, [H, M,
  E](c) = [h, e, m, ]) fi:od:od:od:
```

$$H^E + E^M + M^H = E^H + M^E + H^M,\ [H(1), M(1), E(1)] = [1, 2, 3] \quad (2)$$

```
> c := 0 :for h from 2 to 100 do for e from h + 1 to 100 do for m from e + 1 to 100 do if m^h
  - h^e then c := c + 1 : print(M^H - H^E, [H, M, E(c)] = [h, m, e]) fi:od:od:od:
```

$$M^H - H^E,\ [H, M, E(1)] = [2, 8, 6]$$
$$M^H = H^E,\ [H, M, E(2)] = [2, 16, 8]$$
$$M^H = H^E,\ [H, M, E(3)] = [2, 32, 10]$$
$$M^H = H^E,\ [H, M, E(4)] = [2, 64, 12]$$
$$M^H = H^E,\ [H, M, E(5)] = [3, 9, 6]$$
$$M^H - H^E,\ [H, M, E(6)] = [3, 27, 9]$$
$$M^H = H^E,\ [H, M, E(7)] = [3, 81, 12]$$
$$M^H = H^E,\ [H, M, E(8)] = [4, 8, 6]$$
$$M^H = H^E,\ [H, M, E(9)] = [4, 16, 8]$$
$$M^H = H^E,\ [H, M, E(10)] = [4, 32, 10]$$
$$M^H = H^E,\ [H, M, E(11)] = [4, 64, 12]$$
$$M^H = H^E,\ [H, M, E(12)] = [5, 25, 10]$$
$$M^H = H^E,\ [H, M, E(13)] = [6, 36, 12]$$
$$M^H = H^E,\ [H, M, E(14)] = [7, 49, 14]$$
$$M^H = H^E,\ [H, M, E(15)] = [8, 64, 16]$$
$$M^H = H^E,\ [H, M, E(16)] = [9, 81, 18]$$
$$M^H = H^E,\ [H, M, E(17)] = [10, 100, 20]$$
$$M^H = H^E,\ [H, M, E(18)] = [16, 32, 20]$$
$$M^H = H^E,\ [H, M, E(19)] = [16, 64, 24]$$

(3)

M ^ H = H ^ E , [H, M, E(20)] = [27, 81, 36]

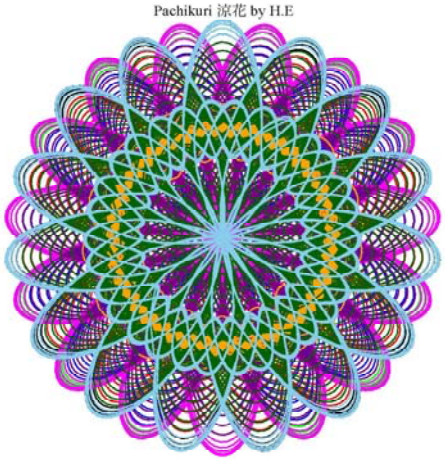
```
> 81^27; 27^36;
```

338139191352272634293022147239224117019852745184856 1

338139191352272634293022147239224117019852745184856 1 by Hirotaka

2 D by Hirotaka Ebisui

Pachikuri 涼花 by H.E



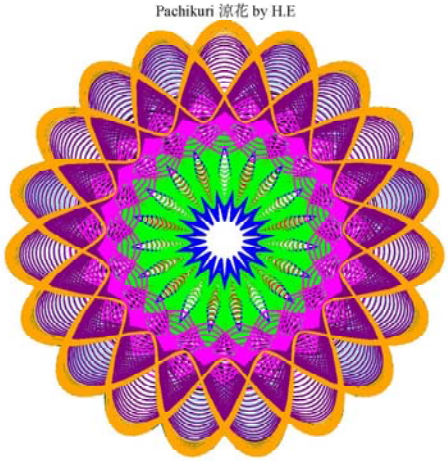
BGT = "10-08 (04:23:53 PM)", No = [196], HEB = [7, 5, 2, 15]

$X = \sin(427\,t) + \cos(915\,t)\,\sin(427\,t)\,\cos(1830\,t)\,\sin(\tan(\cos(t)))$

$Y = \cos(427\,t) + \cos(915\,t)\,\cos(427\,t)\,\cos(1830\,t)\,\sin(\tan(\cos(t)))$

$\left[t = 0..2\,\pi,\ st = \frac{1}{10}\right]$ 蛭子井博幸

Pachikuri 涼花 by H.E



BGT = "10-08 (04:20:07 PM)", No = [90], HEB = [6, 5, 1, 19]

$X = \sin(366\,t) + \cos(1159\,t)^2\,\sin(366\,t)\,\sin(\cos(t))$

$Y = \cos(366\,t) + \cos(1159\,t)^2\,\cos(366\,t)\,\sin(\cos(t))$

$\left[t = 0..2\,\pi,\ st = \frac{1}{10}\right]$ 蛭子井博幸

La Matematica e l' Intelletto

La Matematica chiese all' Intelletto:
"Chi sono io al tuo cospetto?"

Rispose il Padre del Pensiero,
come al solito, sincero:
"Per la tua condotta sempre retta
delle mie figlie sei la prediletta".

"E tu" - ribatté lei con emozione-
"della mia vita l'unica Ragione".

(Maria Intagliata)

IN ENGLISH...
Mathematics and the 'Intellect
Mathematics asked to 'Intellect:
"Who am I in your sight?"
Said the Father of Thought
as usual, sincere:
"For your conduct always straight
are the favorite of my daughters. "
"And you" - she said with emotion-
"in my life the only reason."

. What is Mathematics? What is Geometry?

Mathematics is thought. Geometry is existance.
Mathematics is think. Geometry is look.
We can study about Mathe .Geo
and We enjoy Both. So We are happy.
Time and Space in the future will be
Number and Figure.
We hope that we are we.
and we are love, ideal, passion for Mathe and Geo.
3.1415.... 2.71828.... I^I, ...0, and 1.x,∞
circle .ellipse.oval.lief.+.×、 >、 <、。。。。
Thank you for all

(Hirotaka Ebisui)

第２章　卵形線の定義

【作図定理４】．任意の２つの円0_1，円0_2が補助円として与えられたとき，この卵形線を描くこと。

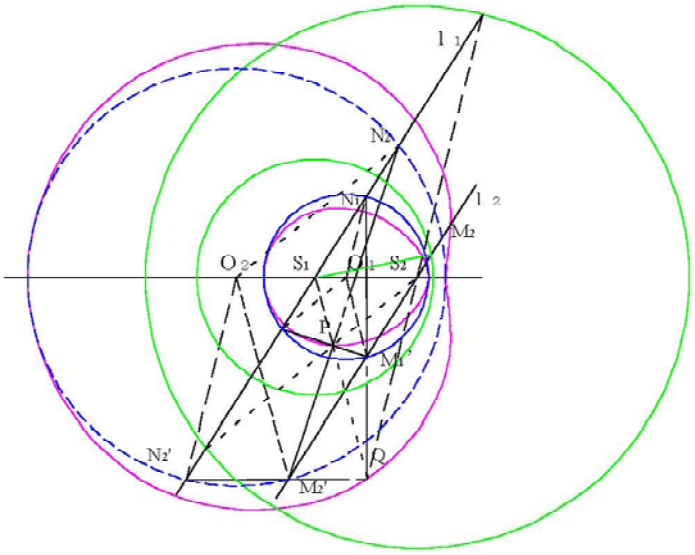


図５　作図定理４による卵形線の構図

図５において，円Ｏ１，円Ｏ２（Ｏ１≠Ｏ２）が与えられている。２つの円の相似中心Ｓ１，Ｓ２を求め，Ｓ１，Ｓ２を通り，互いに平行な直線ｌ１，ｌ２を引く。Ｉ１と円Ｏ１，Ｏ２が交わる点をそれぞれＮ１，Ｎ１’，Ｎ２，Ｎ２’とし，同様にＭ１，Ｍ１’，Ｍ２，Ｍ２’をとる。次に直線$N_1'M_1'$と直線N_2M_2'が垂直に交わる点をＰ、

同様に直線N_1M_1'と$N_2'M_2'$が垂直に交わる点をＱとする。

すると，Ｐ，Ｑは，N_1あるいはM_1が円Ｏ１上を動くとき，卵形線を描く。

同様の作図で、直交する点は、もう一対Ｐ’，Ｑ’がある。

Ciao Jaa Mata

数学日記

geoMathe Diary29th

IDEAL and Passion No.2

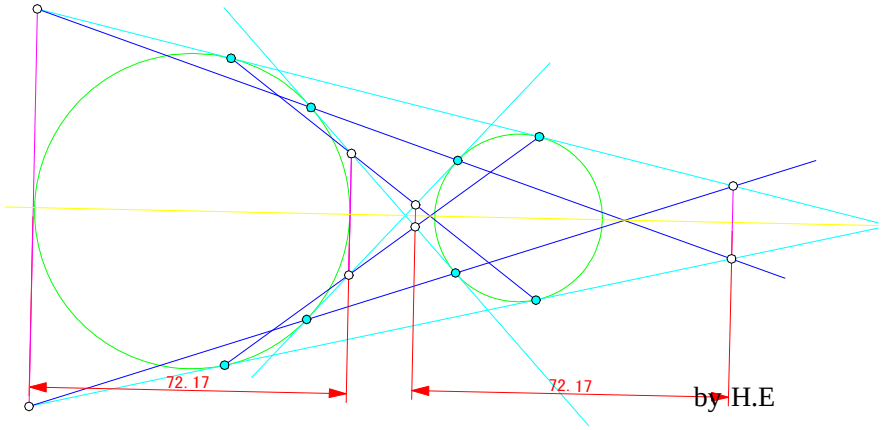
by Hirotaka Ebisui and Maria Intagliata

Aim

by H.E

contents

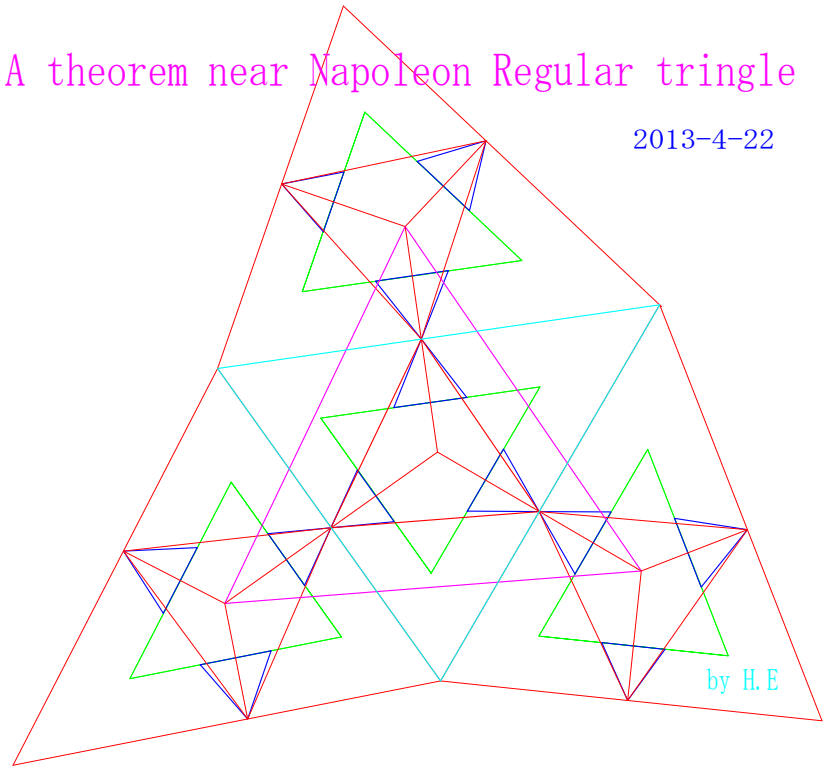
昨日４－２０は誕生日、幸せな日であった。
いろいろな発見もあった。
Pris Table is defined by
{(P1,P2,X)| p1+p2=X^2 }
１７＋１９＝６＾２
４－２１は　スチックメモリが紛失
いらいらした午前中であった。
夜、我々は、5 日ペースで
この日記を出すことにした　4-22 記



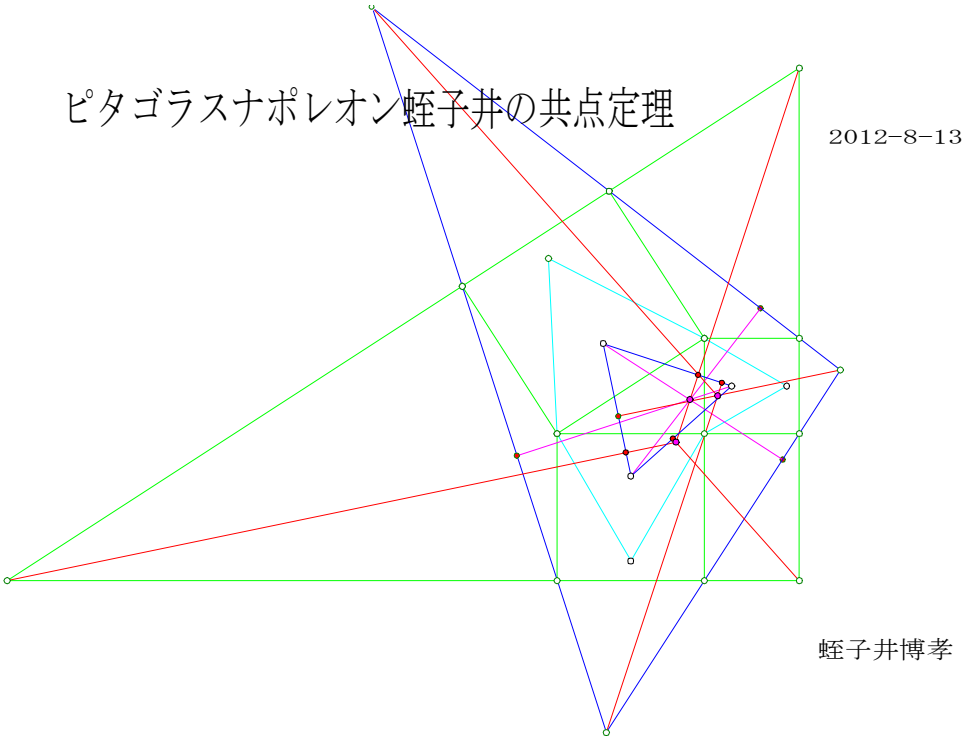
by H.E

卵形線研究センター　http://hoval.blogzine.jp/　2013-4-25

2. Some Theorems wandering in Geometry History Land

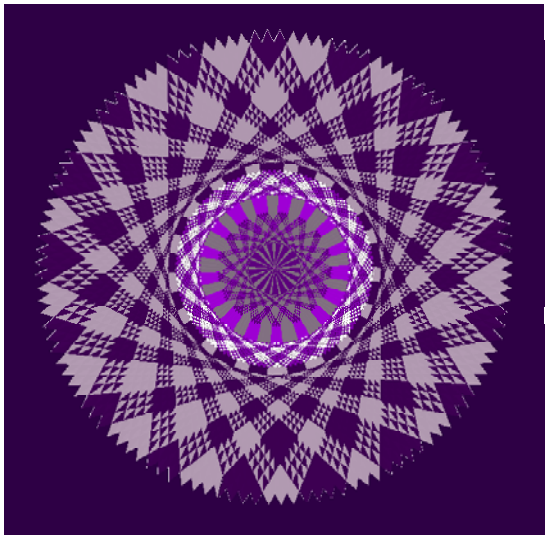


Napoleon Regular Triangle is defined by Three points which are given by 1/3-segment-regular triangle-vertex. And Three reflextion Points of Center point in this figure also make Regular triangle.



3。 3 D EQG by Maria Intagliata

Clock Gear 1

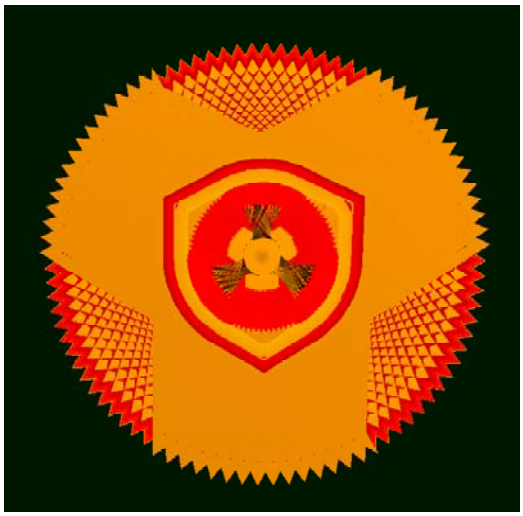


Spring1
X=3*cos(1016201*u)*sin(2*v)
Y=sin(1016203*v)^3*cos(1016221*v)^2
Z=3*sin(1016201*u)*sin(2*v)

RED Daria

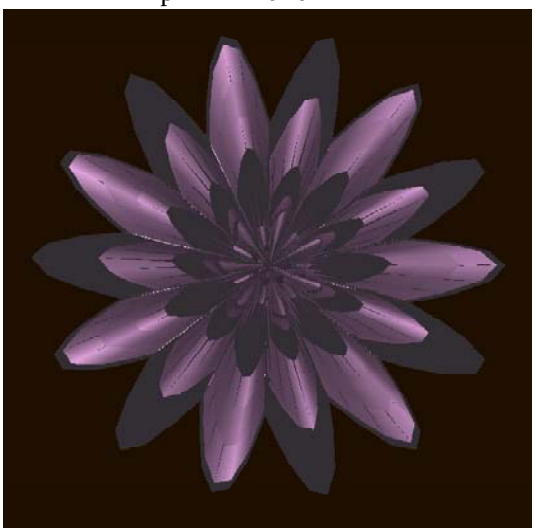
Spring4
X=2*cos(439*u)*cos(v)
Y=3*(sin(312*u)^sin(312*u))^sin(312*u)
*cos(443*v)*0.73*sin(449*u)
Z=2*cos(439*u)*sin(v)

Clock Gear 2



Spring3
X=6*cos(1016201*u)*sin(cos(2*v))
Y=sin(1016203*v)^3*cos(1016221*v)*sin(v)
Z=6*sin(1016201*u)*sin(cos(2*v))

pink Daria



Spring6=Spring4

4. ENJOY NUMBER TABLE

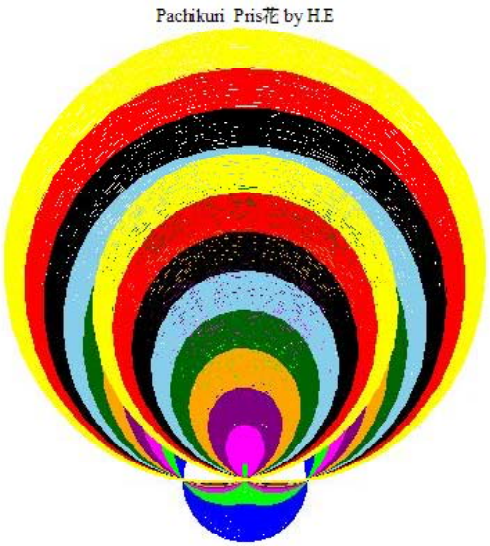
Pris are defined as {(p1,p2,x,n)|p1 +p2=x^n}by H.E :
#We show 25 2jou- 2 Pris, 8 3jou-3pris in THIS Table:

$$\text{Count } [Pris = [17, 19], 36 = [6]^2]$$
$$2\ \text{Count } [Pris = [47, 53], 100 = [10]^2]$$
$$3\ \text{Count } [Pris = [71, 73], 144 = [12]^2]$$
$$4\ \text{Count } [Pris = [283, 293], 576 = [24]^2]$$
$$5\ \text{Count } [Pris = [881, 883], 1764 = [42]^2]$$
$$6\ \text{Count } [Pris = [1151, 1153], 2304 = [48]^2]$$
$$7\ \text{Count } [Pris = [1913, 1931], 3844 = [62]^2]$$
$$8\ \text{Count } [Pris = [2591, 2593], 5184 = [72]^2]$$
$$9\ \text{Count } [Pris = [3527, 3529], 7056 = [84]^2]$$
$$10\ \text{Count } [Pris = [4049, 4051], 8100 = [90]^2]$$
$$11\ \text{Count } [Pris = [6047, 6053], 12100 = [110]^2]$$
$$12\ \text{Count } [Pris = [7193, 7207], 14400 = [120]^2]$$
$$13\ \text{Count } [Pris = [7433, 7451], 14884 = [122]^2]$$
$$14\ \text{Count } [Pris = [15137, 15139], 30276 = [174]^2]$$
$$15\ \text{Count } [Pris = [20807, 20809], 41616 = [204]^2]$$
$$16\ \text{Count } [Pris = [21617, 21647], 43264 = [208]^2]$$
$$17\ \text{Count } [Pris = [24197, 24203], 48400 = [220]^2]$$
$$18\ \text{Count } [Pris = [26903, 26921], 53824 = [232]^2]$$
$$19\ \text{Count } [Pris = [28793, 28807], 57600 = [240]^2]$$
$$20\ \text{Count } [Pris = [34847, 34849], 69696 = [264]^2]$$
$$21\ \text{Count } [Pris = [46817, 46819], 93636 = [306]^2]$$
$$22\ \text{Count } [Pris = [53129, 53147], 106276 = [326]^2]$$
$$23\ \text{Count } [Pris = [56443, 56453], 112896 = [336]^2]$$
$$24\ \text{Count } [Pris = [69191, 69193], 138384 = [372]^2]$$
$$25\ \text{Count } [Pris = [74489, 74507], 148996 = [386]^2] \quad (1)$$

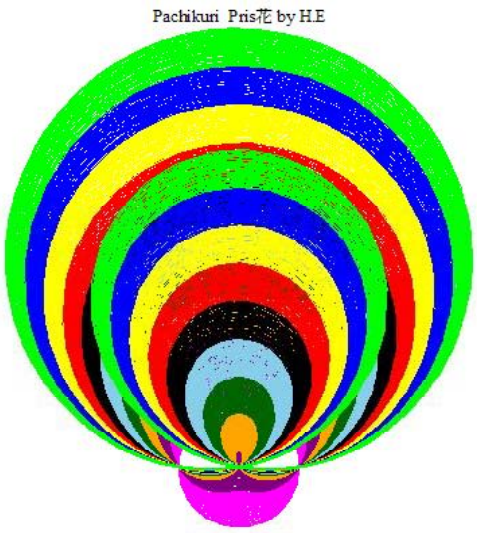
$$\text{Count } 1_{88\ th\ prime}\ [Pris = [439, 443, 449], 1331 = [11]^3]$$
$$\text{Count } 2_{3699\ th\ prime}\ [Pris = [34603, 34607, 34613], 103823 = [47]^3]$$
$$\text{Count } 3_{79703\ th\ prime}\ [Pris = [1016201, 1016203, 1016221], 3048625 = [145]^3]$$
$$\text{Count } 4_{263169\ th\ prime}\ [Pris = [3696493, 3696523, 3696551], 11089567 = [223]^3]$$
$$\text{Count } 5_{283356\ th\ prime}\ [Pris = [4002991, 4002997, 4003001], 12008989 = [229]^3]$$
$$\text{Count } 6_{434938\ th\ prime}\ [Pris = [6344687, 6344729, 6344747], 19034163 = [267]^3]$$
$$\text{Count } 7_{678280\ th\ prime}\ [Pris = [10221397, 10221443, 10221457], 30664297 = [313]^3]$$
$$\text{Count } 8_{950267\ th\ prime}\ [Pris = [14662309, 14662331, 14662337], 43986977 = [353]^3] \quad (2)$$

5. 2D and 3D EQG by Hirotaka Ebisui

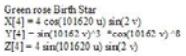
Pris Boloon 1 439



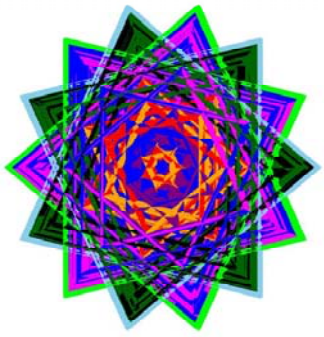
Pris Boloon 2 443



Green Rose Birth Star



Orange Rose Birth Star



6. " PC and Creative"

" PC and Creative" Hirotaka Ebisui

Resently, We use PCs every day ,and, We feel their good abili ty in many fields. I use Maple Soft to creat 2D 3D CG,and m ake Number Table. The reason of These Creative that we sho w on orther pages depend on PC high speep Clock Pulse(2G = 2000000000hez waves/second) CPU and Grafic Accselarater which are made by PC engnear. So, we must appreciate to t hem on here. When we use PC soft for mathe, We often feel a lot of creative of PC,and then, We feel Happinnes.
I use PCs from 1980.and I get Good New Results as we show in this geoMathe Diary.But, I have spended many years to ge t New resent Results.Day by Day ,we become easy comyunicat er in the Net world. and to be able to share the result is equ al to "Pc and Creative" exsitance beyond geo Mathe field.
Thank you for your reading this airtcle.

PC and creativity In English Maria Intagliata

Our imagination has the freedom to think far too absurd or impossible, be ing used in a productive purpose by creativity.
This capability has the purpose of creating, not out of nothing, ideas an d original and functional objects, through the processing of information. A ccording to this definition, even the computer would be creative, but at le ast it lacks the raw material: the imagination.
Creativity is not an innate gift, but only mental skill that can not be taug ht, it should be developed together with the mitochondria that multiply in neurons. It has to be exercised continuously, thanks to motivation, should not be inhibited in the study with a pre-packaged and repetitive teachin g, which limits the intuition and curiosity. It should however be stimulated

by offering almost as a game also scientific activities, such as the study of mathematics.
The game has an important role because preforms to creativity in life, although this is not a game. And what better tool of the PC? This, now inseparable playmate, is able to stimulate the imagination, creativity and the ability to develop on their own.
Thanks to the software, which especially the very young quickly learn and use with great mastery, you can develop creativity, without reducing it to only intuition and curiosity, with commitment, motivation and determination.
PC is a very useful tool because it allows simulations, tests and choices, family activities for creativity in many fields: graphic design, photography, 3D modeling, video, animation, sound design, etc..
The same videogames stimulate creativity and the ability to solve questions and problems. Their intentions are manifold: sports, train the mind, fight aging. But lately they are also used as a teaching aid, even in some universities, where students of Economics are training with specific games that challenge to make decisions and be creative. Video games, in fact, may also arouse positive emotions that give a boost of energy to unleash the creative power.

PC e creatività In Italian Maria Intagliata

La nostra fantasia ha la libertà estrema di pensare anche l'assurdo o l'impossibile, venendo utilizzata in maniera finalizzata e produttiva dalla creatività.

Questa capacità ha lo scopo di creare, non dal nulla, idee ed oggetti originali e funzionali, attraverso l'elaborazione di informazioni . Secondo questa

definizione anche il computer sarebbe creativo, ma gli manca almeno la materia prima: la fantasia.

La creatività non è una dote innata, ma solo un' abilità mentale che, non potendo essere insegnata, va sviluppata insieme ai mitocondri che si moltiplicano nei neuroni. Essa va esercitata continuamente grazie a stimoli motivazionali ; non va inibita nello studio con un insegnamento ripetitivo e preconfezionato, che ne limiti l' intuizione e la curiosità. Va invece stimolata proponendo quasi come gioco anche attività di tipo scientifico, come lo studio della matematica.

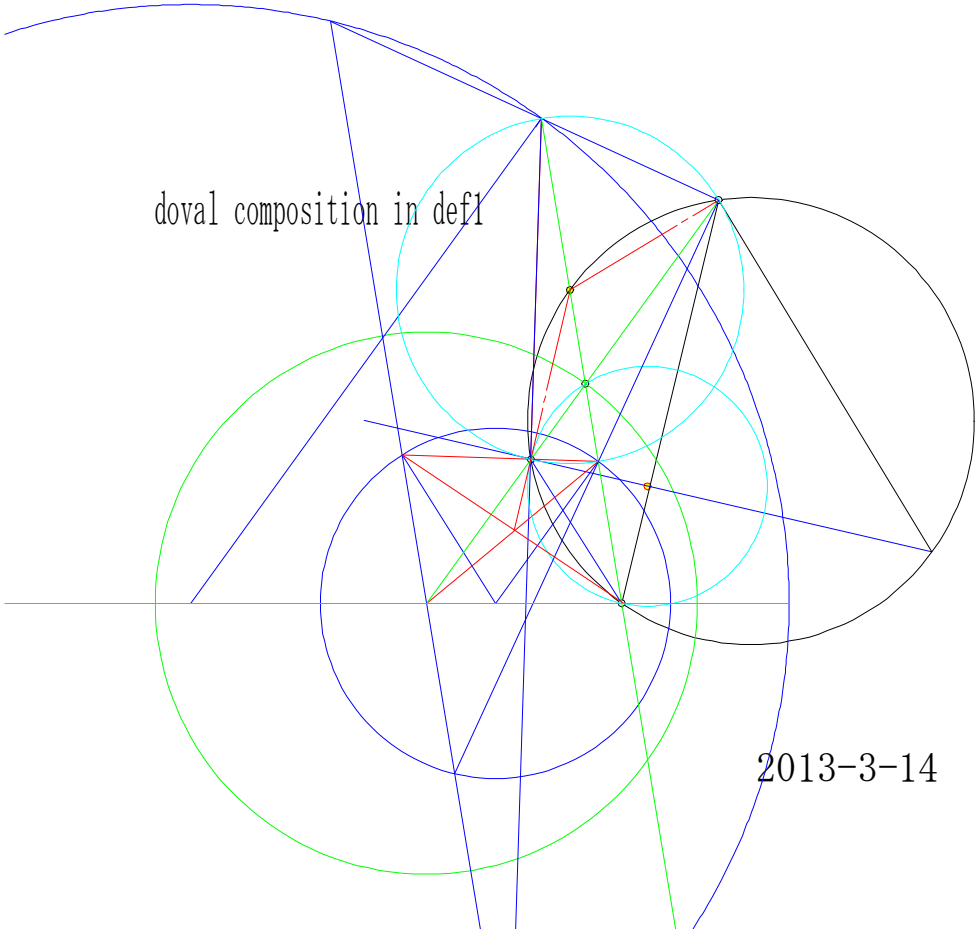
Il gioco ha un ruolo importante perché preforma alla creatività nella vita, anche se questa un gioco non è. E quale strumento migliore del PC? Questo, oramai inseparabile compagno di giochi, è in grado di stimolare la fantasia, la creatività e di sviluppare le capacità in modo autonomo.

Grazie ai software, che soprattutto i giovanissimi apprendono rapidamente ed usano con grande padronanza , è possibile sviluppare la creatività, senza ridurla alle sole intuizione e curiosità, con impegno, motivazione e determinazione.

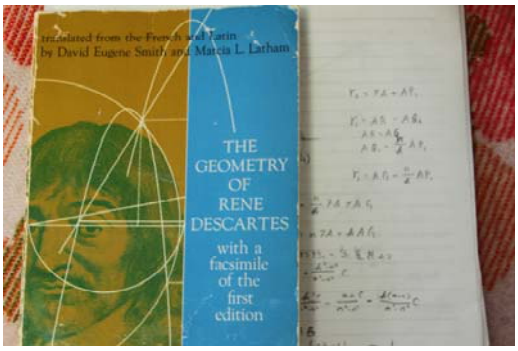
In questo il PC è un validissimo strumento poiché permette simulazioni, verifiche e scelte, attività familiari alla creatività in molti campi: grafica, fotografia, modellazione 3D, video, animazione, sound design ecc.

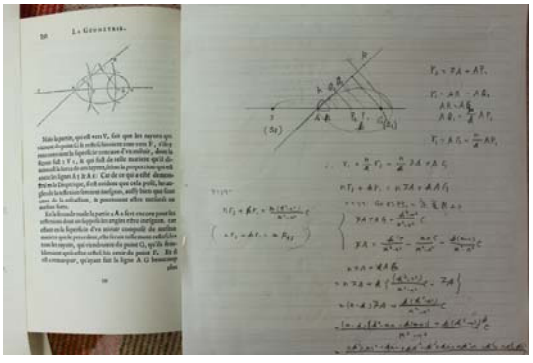
Gli stessi videogiochi stimolano la creatività e la capacità di risolvere quesiti e problemi. I loro intenti sono molteplici : fare sport, allenare la mente , combattere l' invecchiamento. Ma sono ultimamente utilizzati anche come supporto didattico, anche in alcuni atenei, dove studenti di Economia si allenano con specifici videogame che stimolano a prendere decisioni e ad essere creativi. I videogiochi , infatti, possono risvegliare anche emozioni positive che danno una carica di energia a sprigionare la potenza creativa.

7. Doval Geomtery in it's definition Composition

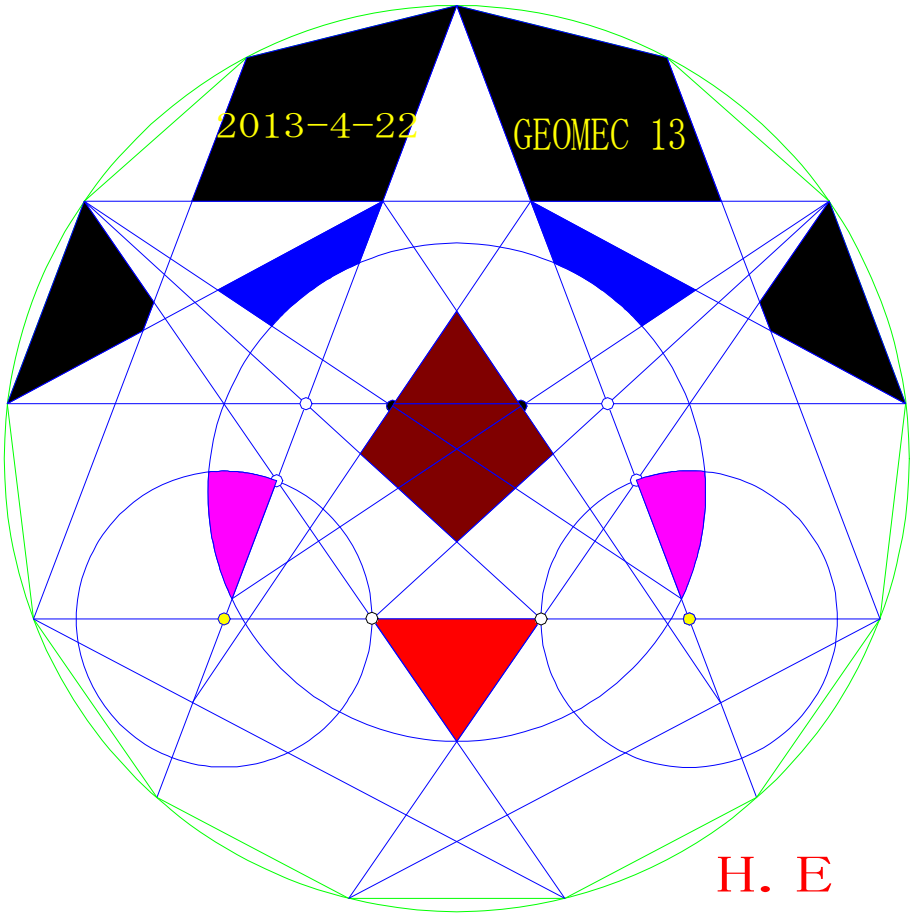


This is Doval DEF 1 Composition(fixed Circle and fixed point) adding{ [normal-lines tangent-lines draw-Method] theorem-composition.}





THANK YOU!!!



Ciao Jaa Mata

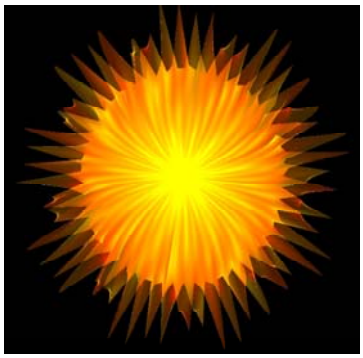
数学日記

geoMathe Diary30th

IDEAL and Passion No.3

by Hirotaka Ebisui（Editor）and Maria Intagliata

hope

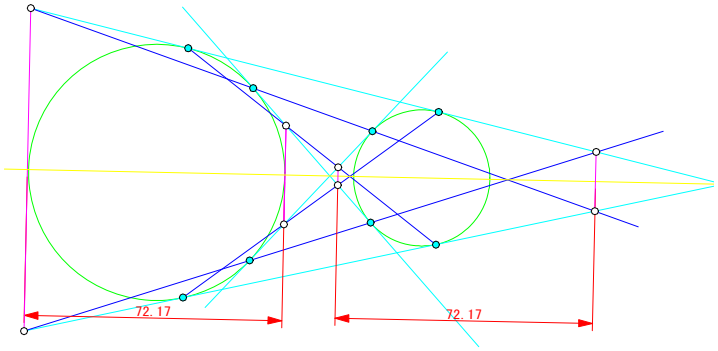


by M.I

contents

Last September I retired. The teaching of mathematics, together with the family, are my whole life. To win the sadness and keep my mind young and contacts with my beloved discipline, I have agreed to share my passion for the work in 3D with my dear friend, prof. Hirotaka Ebisui.I am certain that the pleasant experience of this geoMathediary can make richer and enjoyable the days of my new life

by M.I



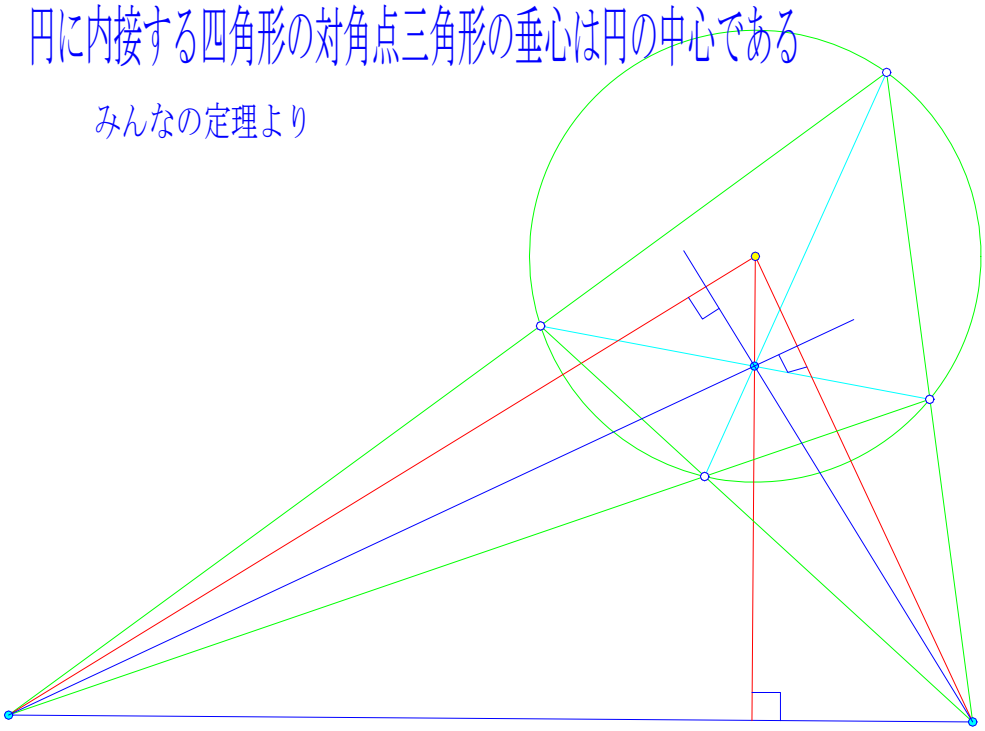
by H.E

卵形線研究センター http://hoval.blogzine.jp/ 2013-4-25 no.2-1

2. Some Theorems in Geometry

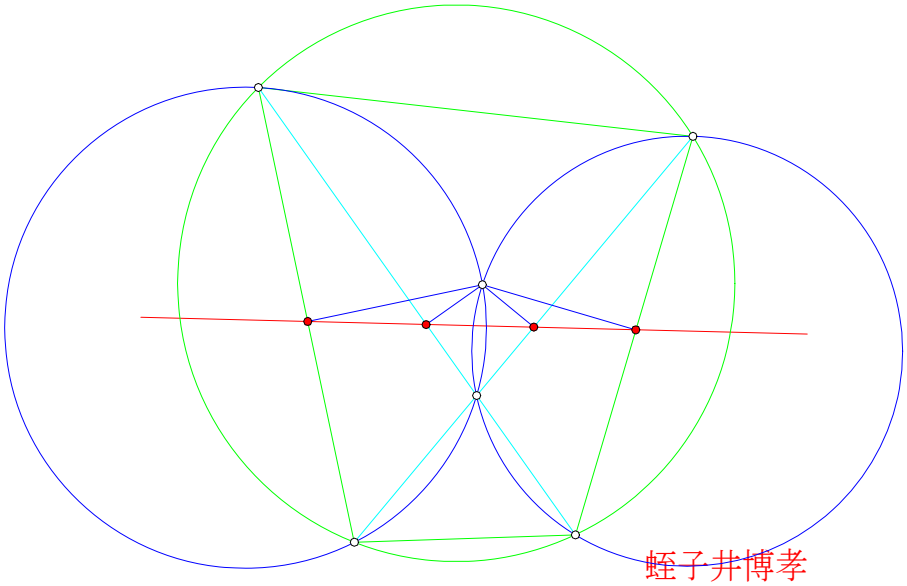
円に内接する四角形の対角点三角形の垂心は円の中心である

みんなの定理より



蛭子井博孝

円に内接する四角形の対角線による分割三角形の外接円の交点に対するその三角形のシムソン線は共通線である



蛭子井博孝

3. NUM TABLE created by Maple by H.E

> # NUMBER Table $\{x^2+y^2=z^h | 1<x<y\le 100,\ 2<h\le 100\}$ **by** *H.E* :

$No(1),\ [2]^2+[11]^2=[5]^3$

$No(2),\ [5]^2+[10]^2=[5]^3$

$No(3),\ [7]^2+[24]^2=[5]^4$

$No(4),\ [9]^2+[46]^2=[13]^3$

$No(5),\ [10]^2+[30]^2=[10]^3$

$No(6),\ [10]^2+[55]^2=[5]^5$

$No(7),\ [15]^2+[20]^2=[5]^4$

$No(8),\ [16]^2+[88]^2=[20]^3$

$No(9),\ [17]^2+[68]^2=[17]^3$

$No(10),\ [18]^2+[26]^2=[10]^3$

$No(11),\ [25]^2+[50]^2=[5]^5$

$No(12),\ [26]^2+[39]^2=[13]^3$

$No(13),\ [28]^2+[96]^2=[10]^4$

$No(14),\ [38]^2+[41]^2=[5]^5$

$No(15),\ [40]^2+[80]^2=[20]^3$

$No(16),\ [47]^2+[52]^2=[17]^3$

$No(17),\ [60]^2+[80]^2=[10]^4$

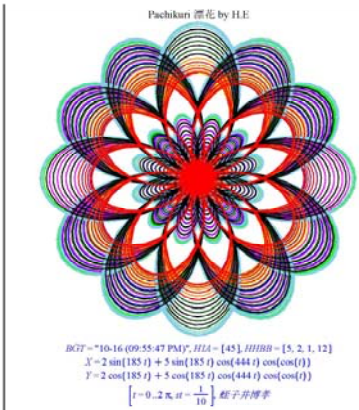
$No(18),\ [75]^2+[100]^2=[25]^3$

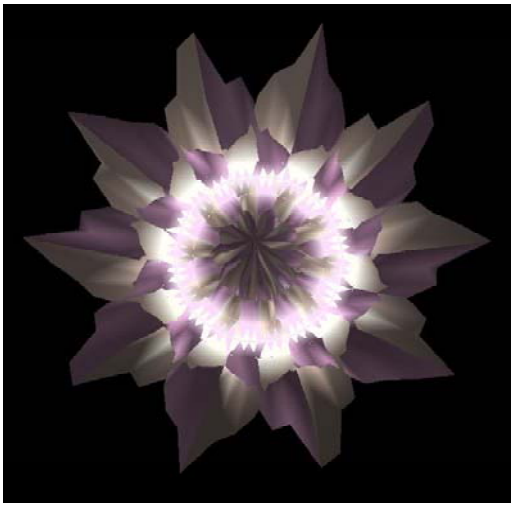
$No(19),\ [75]^2+[100]^2=[5]^6$ **(1)**

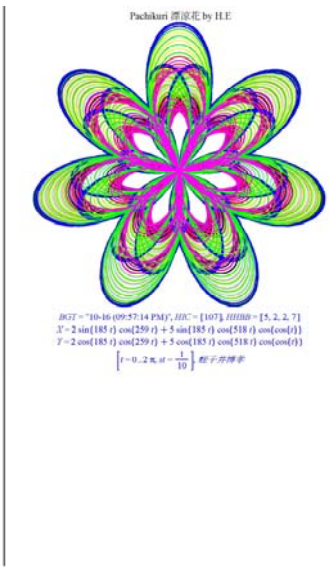
>

>

4． 2D(byH.E)　3D（by M.I） EQG







5 . " TEACH"

Insegnare è sedurre In Italian by Maria Intagliata

Leggendo le biografie di grandi scienziati o studiosi, anche matematici, si trova sempre qualche riferimento ad un docente che ha segnato una loro scelta o un orientamento decisivo nella vita. In fondo, spesso, anche per ciascuno di noi è così: talvolta l'inclinazione verso una disciplina è stata determinate dalla bravura, ma soprattutto dal fascino dell'insegnante. E di seduzione si tratta! Lo studente guarda estasiato l'insegnante che è capace di sedurlo e che può farlo solo se esercita non un mestiere ma una vocazione, nobile ed autentica. L'empatia che deve nascere tra allievo e docente, perché l'insegnamento sia utile al giovane , nella sua crescita umana e culturale, si deve fondare su quell'amore che il docente ha per quello che insegna e che scaturisce da quello che dice. Io posso insegnare bene la matematica solo se la amo e sono in grado di trasferire ad altri la mia passione. S'impara a conoscere solo ciò che si ama e più si ama e ci si appassiona e più profonda e proficua è la conoscenza. Questa è una conquista faticosa, ma l'amore e la passione di chi ce la regala possono renderla più agevole e preziosa. Io sono una insegnante e la cosa più bella che mi sono sentita dire da uno studente in tutta la mia carriera è stata: "Prof, ho capito, ma soprattutto che lei ama quello che dice!"

Teaching is seducing In English by Maria INtagliata

Reading the biographies of great scientists or scholars, even mathematicians, there is always some reference to a teacher who scored their choice or decisive guidance in life. After all, often, for each one of us is this: sometimes the inclination towards a discipline has been determined by the skill, but above all by the charm of the teacher. And it comes to seduction!

The student looks ecstatic that the teacher is able to seduce him and he can do it if he pursues not only a profession but a vocation, a noble and authentic.The empathy that must be born between student and teacher, because teaching is useful to young people and their human and cultural growth, must be founded on the love that the teacher has to teach and what that stems from what he says. I can teach mathematics well only if I love her and are able to transfer to others is my passion. We learn to know only what you love and the more we love and we are passionate about and deeper and profitable is knowledge. This is a hard won, but the love and passion of the one who gives it can make

it easier and more valuable. I am a teacher and the most beautiful thing that I was told by a student in my whole career has been: "Prof, I understand, but most of all that you love what you said!".

教育とは、 蛭子井博考

教育とは何だろう.自己教育、他者教育、見本と演習を与え合うこと.これですべてと思う。母がよく見せた。肩を見せて育てることを。多くを語っても仕方がない.教育には、情熱と理想が居る。幸い私は、教育職、研究職、教育職に就いた経験がある.目で語るまで熟練しなかったが、乙女のきれいな目をみて、疑問を解決できた経験がある。また、「します。しなさい。させてください。しなければないませんなどの実行条件のニュワンスの違いをわかることが,仕事上必要であった。人が何が言いたいか、何がしたいか、第2外国語でつかむ経験したことが、役に立つ。教育は、言葉を超えた仕事である。知識の獲得、知的発達は、言葉だけではできない。厳密に考える癖だけでは進歩しない。これが、私の教育経験である。何回も試みることが、一番大事である。ありがとうピタゴラス。

What is to teach?　by Hirotaka Ebisui

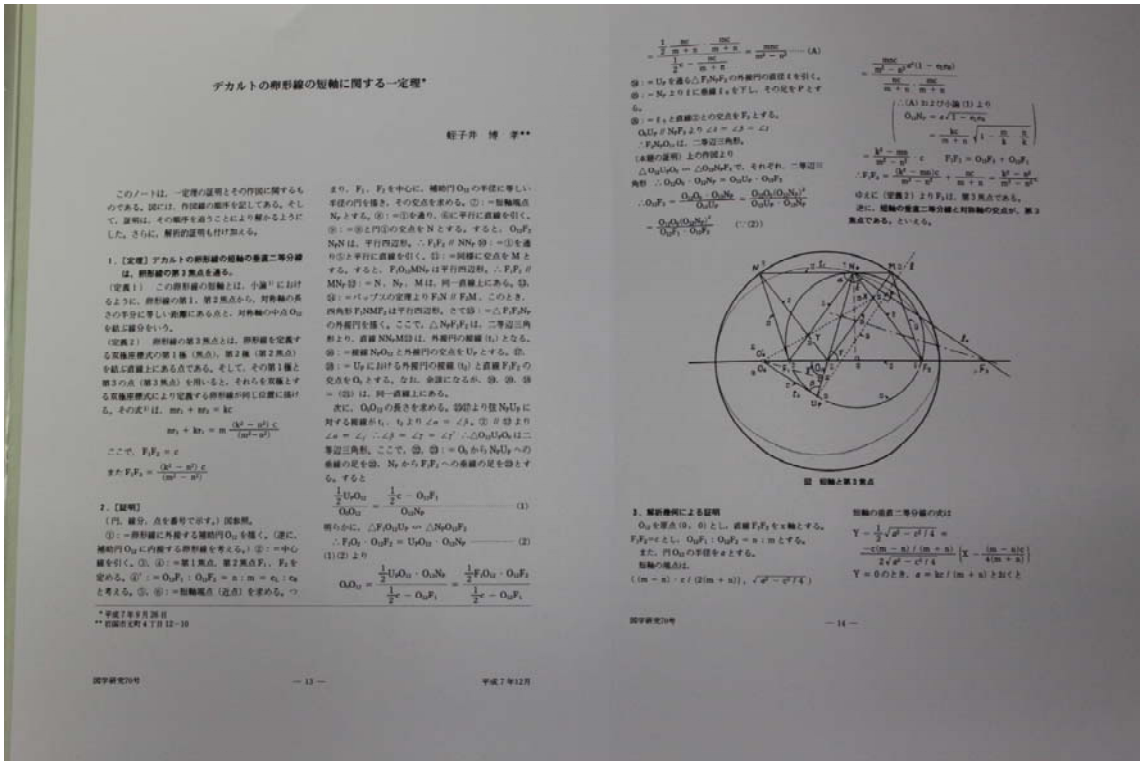
What is to teach?　Selfedu otheredu. To give good example and excersise. This is all to teach,I think. My mother often show me standing form in the kitchin. It is backside for me, and learn what does she do. No more word for Edu. For Edu,we need Ideal and Passion. Furtunately, I had edu job, research job ,and edu jod.I could not be good teacher by teach useing eye contact. But ,one day, pure girls eye give me the inspiration to solve my problem of research. Another　experience. My poss said" we do this.（します）" ,not said "you must do this（しなさい）

We　Need catch what we do. What does he want to say or do? by second langage. I cought them.

To teach is beyond words. For to learn knowledge and to grow in mind, words is not enough、and only to consider detailly is not good. This is myself EDu with others. To try again and again

is most important.Thank Phytagoras（ mytearcher of mathe）.

6. Doval Geomtery in it's Axes Composition



デカルトの卵形線の短軸に関する一定理*

軽子井 博 孝**

このノートは、一定理の証明とその作図に関するものである。図には、作図線の順序を記してある。そして、証明は、その順序を追うことにより解かるようにした。さらに、解析的証明も付け加える。

1.【定理】デカルトの卵形線の短軸の垂直二等分線は、卵形線の第3焦点を通る。

(定義1) この卵形線の短軸とは、小論[1]における、卵形線の第1、第2焦点から、対称軸の長さの半分に等しい距離にあると、対称軸の中点 O_M を結ぶ線分をいう。

(定義2) 卵形線の第3焦点とは、卵形線を定義する双極座標式の第1極（焦点）、第2極（第2焦点）を結ぶ直線上にある点である。そして、その第1極と第3の点（第3焦点）を用いると、それらを双極とする双極座標式により定義する卵形線が同じ位置に描ける。その式[1]は、$m\gamma_1 + k\gamma_2 = kc$

$$m\gamma_1 + k\gamma_2 = m\frac{(k^2-n^2)c}{(m^2-n^2)}$$

ここで、$F_1F_2 = c$

また $F_1F_2 = \frac{(k^2-n^2)c}{(m^2-n^2)}$

2.【証明】

（円、線分、点を番号で示す。）図参照。

①：一卵形線に外接する補助円 O_{12} を描く。（逆に、補助円 O_{12} に内接する卵形線を考える。）②：一中心線を引く。③、④：＝第1焦点、第2焦点 F_1、F_2 を定める。⑤'：$=O_1F_1 : O_2F_2 = n : m = e_1 : e_2$ と考える。⑤、⑥：＝短軸端点（近点）を求める。つまり、F_1、F_2 を中心に、補助円 O_{12} の半径に等しい半径の円を描き、その交点を求める。⑦：＝短軸端点 N_0 とする。⑧：＝①を通り、⑤に平行に直線を引く。⑨：＝⑧と円①の交点を N とする。すると、$O_{12}F_2N_0N$ は、平行四辺形。∴ $F_2F_1 \parallel NN_0$ ⑨：＝①を通り⑤と平行に直線を引く。⑪：＝同様に交点を M とする。すると、$F_2O_{12}MN_0$ は平行四辺形。∴ $F_2F_1 \parallel MN_0$ ⑨：＝N、N_0、M は、同一直線上にある。⑨、⑪：＝パップスの定理より $F_1N \parallel F_2M$。このとき、四角形 F_1NMF_2 は平行四辺形。さて ⑩：＝△$F_1F_2N_0$ の外接円を描く。ここで、△$N_0F_1F_2$ は、二等辺三角形より、直線 NN_0MF_2 は、外接円の直径（⑪）となる。⑫：＝直線 N_0O_{12} と外接円の交点を U_F とする。⑬、⑭：＝U_F における外接円の接線（⑪）と直線 F_1F_2 の交点を O_L とする。なお、余談になるが、⑨、⑩、⑪＝（⑬）は、同一直線上にある。

次に、O_LO_{12} の長さを求める。⑬'より N_0U_F に対する接線が、t_1 より $\angle\alpha = \angle\beta$。②'∥⑬'より $\angle\alpha = \angle\gamma$ ∴$\angle\beta = \angle\gamma = \angle\gamma'$ ∴△$O_{12}U_FO_L$ は二等辺三角形。ここで、⑬、⑭'＝O_L から N_0U_F への垂線の足を ⑬、N_0 から F_1F_2 への垂線の足を ⑭とする。すると

$$\frac{\frac{1}{2}U_FO_{12}}{O_LO_{12}} = \frac{\frac{1}{2}c - O_{12}F_1}{O_{12}N_0} \quad \cdots\cdots (1)$$

明らかに、△$F_1O_{12}U_F \backsim$ △$N_0O_{12}F_2$

$$\therefore F_1O_L - O_{12}F_1 = U_FO_{12} - O_{12}N_0 \quad \cdots\cdots (2)$$

(1)(2) より

$$O_LO_{12} = \frac{\frac{1}{2}U_FO_{12} \cdot O_{12}N_0}{\frac{1}{2}c - O_{12}F_1} = \frac{\frac{1}{2}F_1O_{12} \cdot O_{12}F_1}{\frac{1}{2}c - O_{12}F_1}$$

$$= \frac{\frac{mc}{m+n} \cdot \frac{mc}{m+n}}{\frac{1}{2}c - \frac{mc}{m+n}} = \frac{m^2c}{m^2-n^2} \quad \cdots\cdots (A)$$

⑬：＝U_F を通る△$F_1N_0F_2$ の外接円の直径 t を引く。

⑭：＝N_0 より t に垂線 s を下し、その足を P とする。

⑮：＝s と直線②との交点を F_3 とする。

$O_{12}U_F \parallel N_0F_2$ より $\angle\delta = \angle\lambda = \angle\varepsilon$

∴$F_3N_0O_{12}$ は、二等辺三角形。

（本線の証明）上の作図より

△$O_{12}U_FN_0 \equiv$ △$O_{12}N_0F_3$ で、それぞれ、一等辺三角形 ∴$O_{12}O_L - O_{12}N_0 = O_{12}U_F - O_{12}F_3$

$$\therefore O_LF_3 = \frac{O_{12}O_L - O_{12}N_0}{O_{12}U_F} = \frac{O_{12}O_L/O_{12}N_0{}^2}{O_{12}U_F \cdot O_{12}N_0} = -\frac{O_{12}O_L/O_{12}N_0{}^2}{O_{12}F_1 \cdot O_{12}F_2} \quad (\because (2))$$

$$= \frac{\frac{m^2c}{m^2-n^2}c^2(1-e_1e_2)}{\frac{mc}{m+n} \cdot \frac{mc}{m+n}}$$

$$\left(\because (A) \text{ および小論 (1) より } O_{12}N_0 = e_1e_2\frac{mc}{m^2-n^2}\right)$$

$$= \frac{\frac{m^2c}{m^2-n^2}}{\frac{mc}{m+n}}\sqrt{1-\frac{n}{m}\frac{n}{m}}$$

$$= \frac{k^2-mn}{m^2-n^2} \cdot c \qquad F_1F_3 = O_{12}F_3 + O_{12}F_1$$

$$\therefore F_1F_3 = \frac{(k^2-mn)c}{m^2-n^2} + \frac{mc}{m+n} = \frac{k^2-n^2}{m^2-n^2}c$$

ゆえに（定義2）より F_3 は、第3焦点である。

よって、短軸の垂直二等分線と対称軸の交点が、第3焦点である、といえる。

図 短軸と第3焦点

3. 解析幾何による証明

O_{12} を原点（0，0）とし、直線 F_1F_2 を x 軸とする。

$F_1F_2 = c$ とし、$O_1F_1 : O_2F_2 = n : m$ とする。

また、円 O_{12} の半径を a とする。

短軸の端点は、

$\left((m-n) : c / (2(m+n)),\ \sqrt{a^2 - c^2/4}\right)$

短軸の垂直二等分線の式は

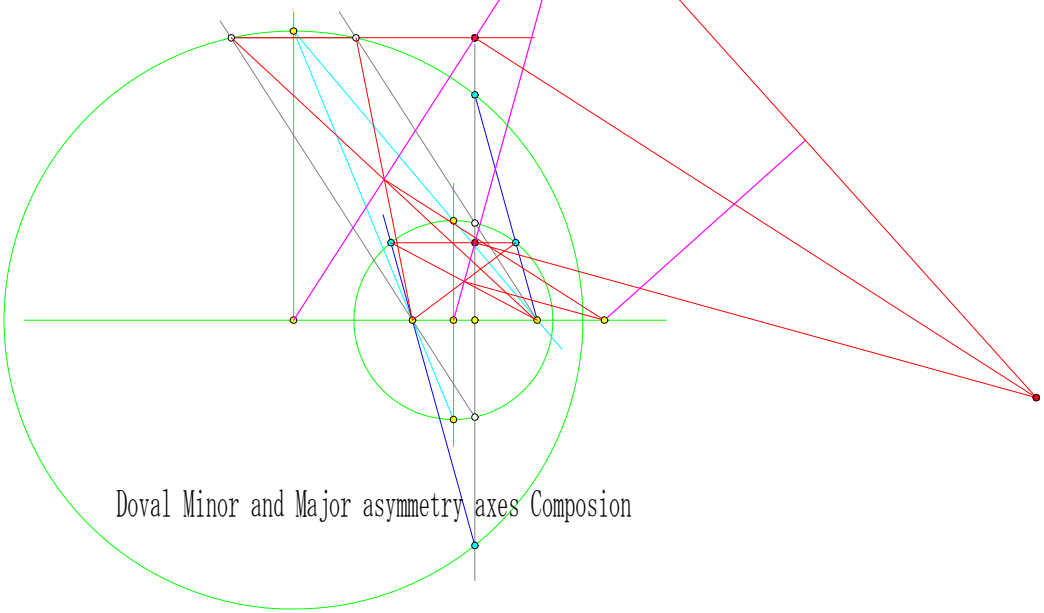
$$Y - \frac{1}{2}\sqrt{a^2 - c^2/4} = \frac{-c(m-n)/(m+n)}{2\sqrt{a^2 - c^2/4}}\left\{X - \frac{(m-n)c}{4(m+n)}\right\}$$

$Y = 0$ のとき、$a = kc/(m+n)$ とおくと

* 平成7年9月28日
** 岩国市立町4丁目12-10

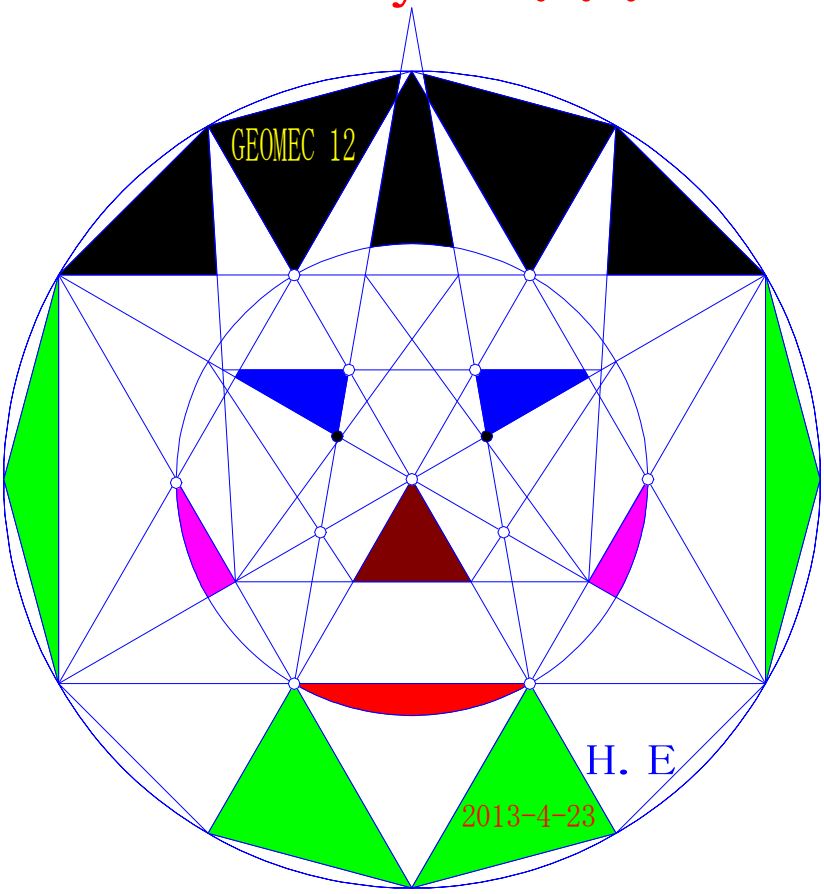
Dovalの非対称軸はDOVALの法線である。

Dovalの非対称軸端点の内外法線交点接線交点を結ぶ線分の垂直2等分線は第三焦点を通る



Doval Minor and Major asymmetry axes Composion

Thank you!!!



編集後記　目次を決め、二つ目のシムソンの新定理を探すのには苦労した。
証明なしの使命の構図を見つけた。また、マリアさんと自分の CG を一つのページにした.
今回は、教育とはで記事を書き合った。最後の DOVAL についての新定理は自慢できる。
geoMathe　Diary　30th は急いで創った。　3 日に一回のハイペースである。以後 5 日計画に戻すつもりだ.

蛭子井博孝記