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(2)

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	1	2	
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: 1777 1855

: 1802 1860

: 1793 1856

: 1826 1866

1.

(1)

$$K = \{ \ (x,y) \quad x^2 + y^2 \ < \ a^2 \ \}$$

: (k-)

: ( )(k-)

· k- k-
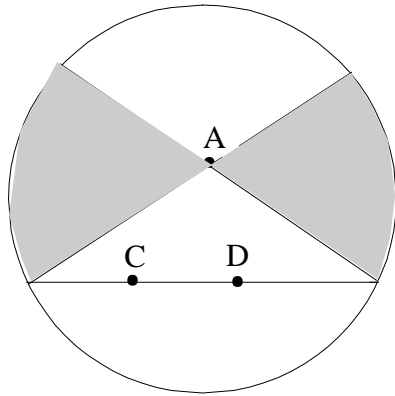
· k- k- .

· k- k-

· k- A k- CD .

(2) (a)

$$P = \{ \ (x,y) \quad x^2 + y^2 \ < \ b^2 \ \}$$

: (p-)

: O ( )

( )(p-)

· P p- l : AP, BP

(2)

( ) ( )

(a) .

(3) (b)

$$P \quad = \{ \ (x, y) \quad y > 0 \quad \}$$

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: x (x)

x (x

)

· A l ( ) .

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1, 2, 5

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5   .

(1)

:   (e-   )
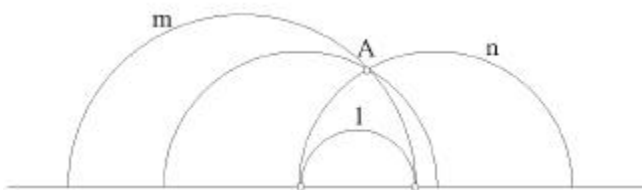
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P Q

A

O

A   C

· A   A   .
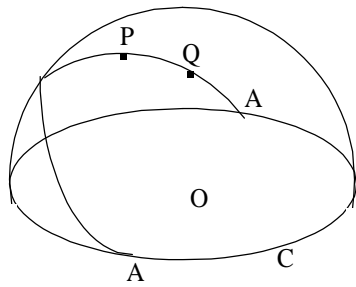( )   )
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(　　　, 1603)

180°　　　　　.

2　　　　　　　　　　　　.

[　　]　　　　r　　　　　　　　　　　　　　　θ　　　　,
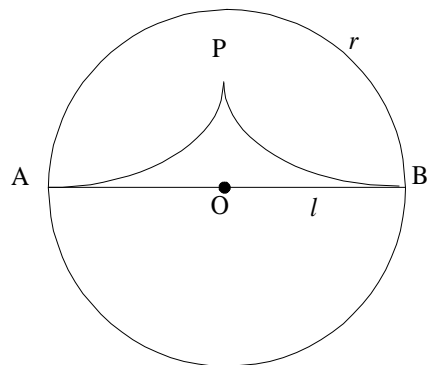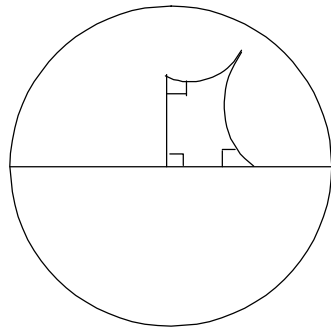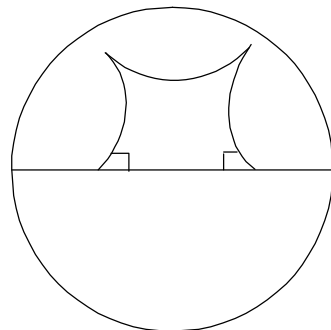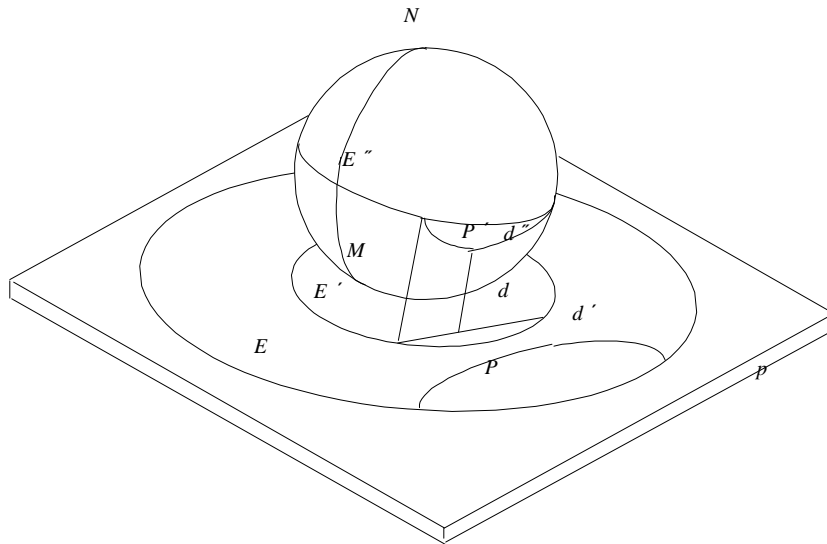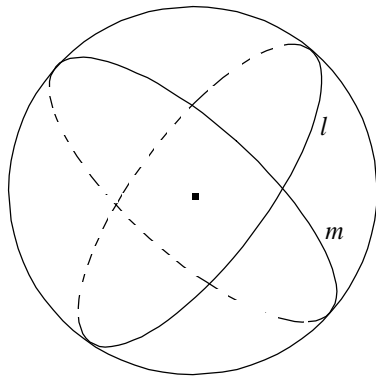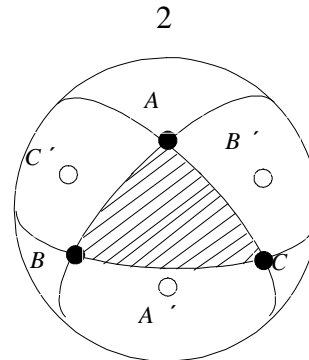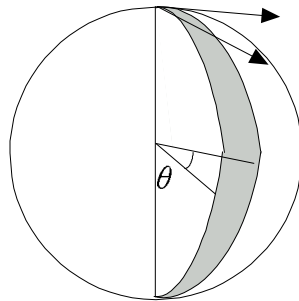
(　　　　　　　)$\times \dfrac{\theta}{2\pi} = 4\pi r^2 \times \dfrac{\theta}{2\pi} = 2r^2\theta$

A , B , C　　　　　　　　　　　　　　O

A　　, B　　, C

$\triangle ABC \equiv \triangle A\ \ B\ \ C\ \ ,\ \triangle A\ \ BC \equiv \triangle AB\ \ C\ \ ,$

$\triangle AB\ \ C \equiv \triangle A\ \ BC\ \ ,$

$2r^2 \angle A = \triangle ABC + \triangle A\ \ \ BC$

$2r^2 \angle B = \triangle ABC + \triangle AB\ \ C$

$2r^2 \angle C = \triangle ABC + \triangle ABC$

$2r^2(\angle A + \angle B + \angle C) = 3\triangle ABC + \triangle A\ \ BC + \triangle AB\ \ C + \triangle ABC$

$\triangle ABC + \triangle A\ \ BC + \triangle AB\ \ C + \triangle ABC = 2\pi r^2$

$r^2(\angle A + \angle B + \angle C) = \triangle ABC + \pi r^2$

$\underline{\triangle ABC = r^2(\angle A + \angle B + \angle C - \pi)}$ ……

0　　$\triangle ABC$　　$2\pi r^2$

$\underline{\pi\quad \angle A + \angle B + \angle C\quad 3\pi}$ ……

2

13   :

13.2   :

                    ?

                              O k P

) OP = $k \cdot OP$

) O, P, P .

                    P (hamathety)

   $H(O, \ k)$.

1

                    $A\ (a)$ $B\ (b)$ $A\ B$ $\dfrac{a}{b}$

$I,$ E , $H(I, \ -\dfrac{b}{a})$ $H(E, \ \dfrac{b}{a})$

                    .

[   ]
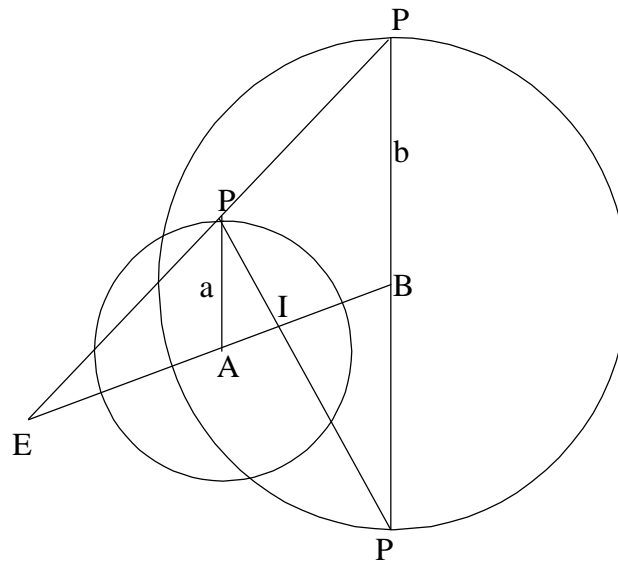
   $A\ B$ $A\ (a)$ P $B\ (b)$

   P $B\ P$ $A\ P$, $B\ P$ $A\ P$.

   P P $A\ B$ E , P P $A\ B$ I

）△E A P △E B P

$$\frac{E\ P}{E\ P}=\frac{E\ B}{E\ A}=\frac{b}{a}\qquad\qquad E\ =E\qquad\qquad EP\ =\frac{b}{a}EP$$

$$B(b)\qquad\qquad H(E\,,\frac{b}{a})\qquad\qquad A(a)\qquad\qquad.$$

）△I A P △I B P

$$\frac{I\ P}{I\ P}=\frac{I\ B}{I\ A}=\ -\frac{b}{a}\qquad\qquad I\ =I\qquad\qquad IP\ =\ -\frac{b}{a}IP$$

$$B(b)\qquad\qquad H(I\,,-\frac{b}{a})\qquad\qquad A(a)\qquad\qquad.$$

2

$A_1A_2A_3$ $H,$ $O,$ G ，

$HG=2\cdot GO$.

[ ]
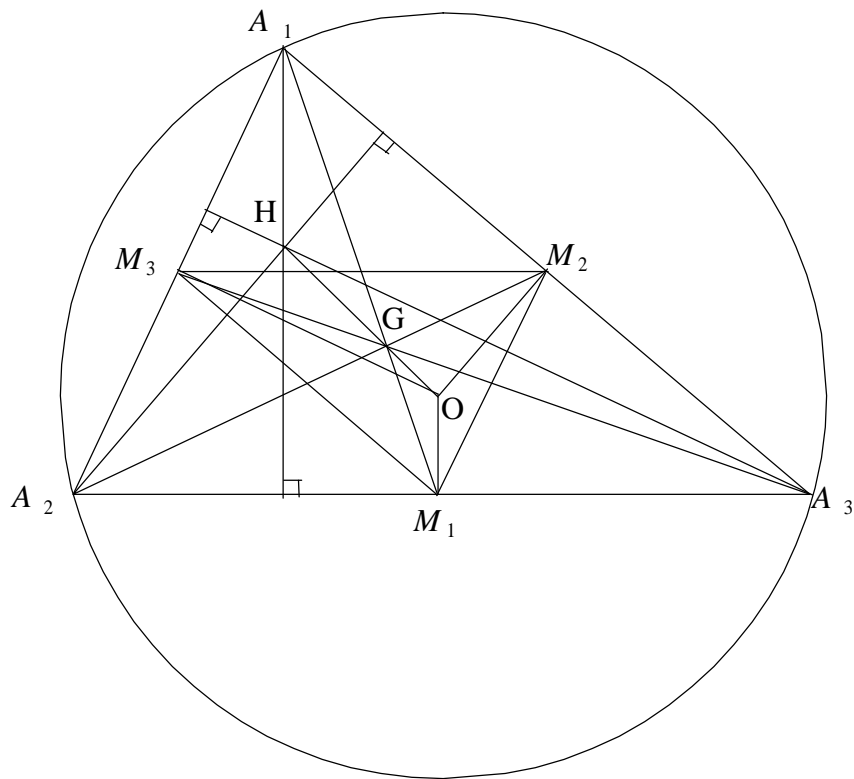
△$A_1A_2A_3$ M_1,M_2,M_3 G △$A_1A_2A_3$

△$M_1M_2M_3$.

$2:1$

$$\frac{A_1G}{GM_1} = \frac{A_2G}{GM_2} = \frac{A_3G}{GM_3} = 2$$

$\triangle A_1A_2A_3$ $H(G, -2)$ $\triangle M_1M_2M_3$.

$\triangle A_1A_2A_3$ H $H(G, -2)$ $\triangle M_1M_2M_3$ O

.

H, G, O $HG = 2 \cdot GO$.

3

O H $A_1A_2A_3$ $M_!, M_2, M_3$

A_2A_3, A_3A_1, A_1A_2 , H_1, H_2, H_3 , N_1, N_2, N_3 A_1H,

A_2H, A_3H . 9 $M_1, M_2, M_3, H_1, H_2, H_3, N_1$,

N_2, N_3 , N OH ,

$\triangle A_1A_2A_3$ $\frac{1}{2}$.

[   ]
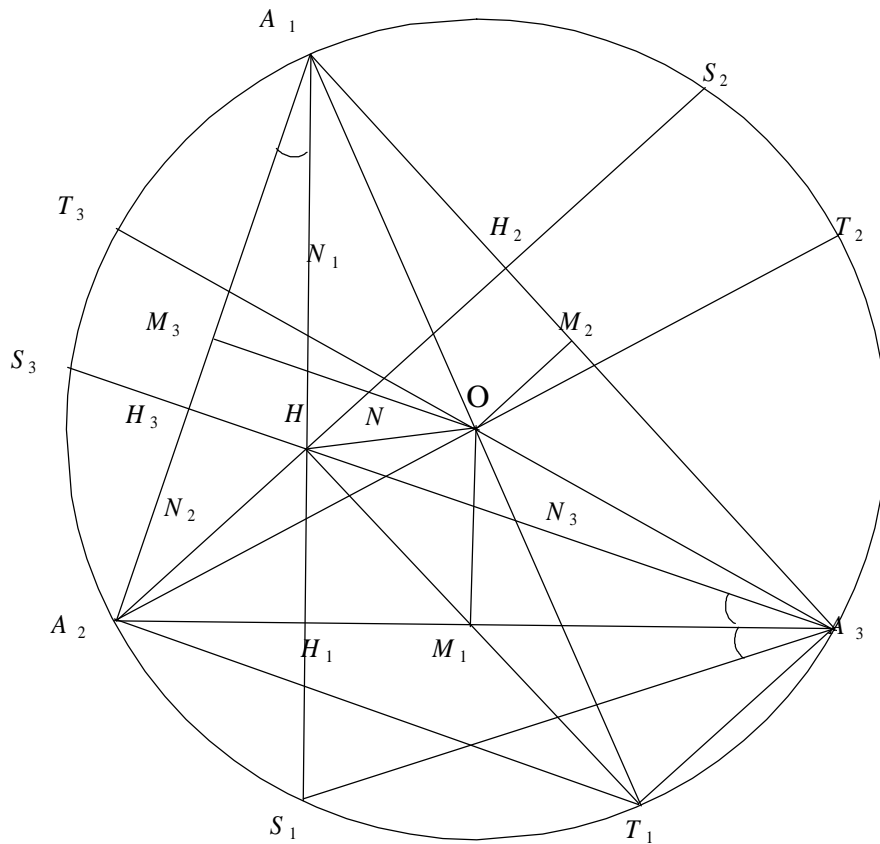
N_1, N_2, N_3 A_1H, A_2H, A_3H $\triangle N_1N_2N_3$

$H(H,\frac{1}{2})$ $\triangle A_1A_2A_3$.

   $\triangle N_1N_2N_3$ N $H(H,\frac{1}{2})$ $\triangle A_1A_2A_3$ O

   . H, N, O , N HO .

   , $\triangle A_2A_3H_3$ $\triangle A_2A_1H_1$

$\angle A_2A_3H_3 = 90° - \angle A_2 = \angle A_2A_1H_1 = \angle A_2A_1S1 = \angle A_2A_3S_1$

$\triangle HH_1A_3$ $\triangle S_1H_1A_3$. H_1 HS_1 .

            H_2, H_3 HS_2, HS_3 .

         A_1T_1, A_2T_2, A_3T_3 T_1A_2 A_3H_3 A_1A_2

   T_1A_2 A_3H_3 . T_1A_3 A_2H_2 .

         $HA_3T_1A_2$ HT_1 A_3A_2

   M_1 HT_1 . M_2, M_3 HT_2, HT_3 .

            $H(H,\frac{1}{2})$ A_1, A_2, A_3, S_1, S_2, S_3, T_1, T_2, T_3

N_1, N_2, N_3, H_1, H_2, H_3, M_1, M_2, M_3 .

   N_1, N_2, N_3, H_1, H_2, H_3, M_1, M_2, M_3 $\triangle N_1N_2N_3$.

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