1984 FI4.4

一等邊三角形之面積為 $4\sqrt{3}$ cm²。若其周界長 d cm，求 d 的值。

The area of an equilateral triangle is $4\sqrt{3}$ cm². If its perimeter is d cm, find the value of d.

1985 FSI.4

若一邊長 2 cm 之正三角形之面積為 $d\sqrt{3}$ cm²，求 d 的值。

The length of a side of an equilateral triangle is 2 cm.

If its area is $d\sqrt{3}$ cm², find the value of d.

1986 FSG.3

一正三角形之面積為 $100\sqrt{3}$ cm²。若其周界為 p cm，求 p 的值。

The area of an equilateral triangle is $100\sqrt{3}$ cm². If its perimeter is p cm, find the value of p.

1987 FG6.2

一正三角形之周界為 p。若其面積為 $k\sqrt{3}$，求 k 的值。

The perimeter of an equilateral triangle is 60.

If its area is $k\sqrt{3}$, find the value of k.

1988 FG9.1

一正三角形的面積是 $50\sqrt{12}$。若它的周界是 p，求 p 的值。

The area of an equilateral triangle is $50\sqrt{12}$.

If its perimeter is p, find the value of p.

1989 HI7

某小孩以平行四邊形的兩條相鄰邊長的乘積當作該圖形的面積，他計算的答案是正確面積的 $\sqrt{2}$ 倍。若該平行四邊形的銳角是 $x°$，求 x 的值。

A boy tries to find the area of a parallelogram by multiplying together the lengths of two adjacent sides. His answer is $\sqrt{2}$ times the correct area.

If the acute angle of the parallelogram is $x°$, find the value of x.

1991 FSG.3-4

某童把一平行四邊形兩鄰邊相乘當作該圖形之面積，其結果為正確答案之兩倍。若該圖形之銳角及鈍角依次為 $h°$ 及 $k°$，求 h 及 k 的值。

A boy tries to find the area of a parallelogram by multiplying together the lengths of two adjacent sides. His answer is double the correct answer.

If the acute angle and the obtuse angle of the figure are $h°$ and $k°$ respectively, find the values of h and k.

1992 FG8.1

一邊長 A cm 的等邊三角形之面積為 $\sqrt{3}$ cm²。求 A 的值。

The area of an equilateral triangle of side A cm is $\sqrt{3}$ cm². Find the value of A.

1992 FG9.1
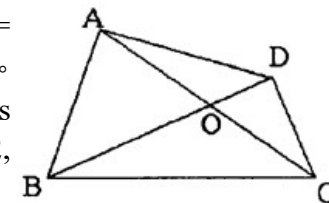
若一正六邊形 $ABCDEF$ 之面積為 $54\sqrt{3}$ cm²，且 $AB = x$ cm，求 x 的值。

If the area of a regular hexagon $ABCDEF$ is $54\sqrt{3}$ cm² and $AB = x$ cm, find the value of x.

1995 HG2

如圖，四邊形 $ABCD$ 的對角綫交於 O。若 $\angle AOB = 30°$、$AC = 24$ 及 $BD = 22$，求四邊形 $ABCD$ 的面積。

In the figure, $ABCD$ is a quadrilateral whose diagonals intersect at O. If $\angle AOB = 30°$, $AC = 24$ and $BD = 22$, find the area of the quadrilateral $ABCD$.

1996 FI1.1 2016 FI2.1

若一個等邊三角形與一個正六邊形周長相等，而其面積比為 $2:a$，求 a 的值。

The perimeter of an equilateral triangle is exactly the same in length as the perimeter of a regular hexagon. The ratio of the areas of the triangle and the hexagon is $2 : a$, find the value of a.
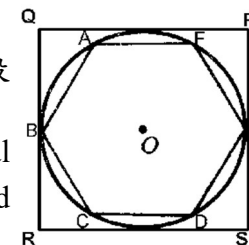
1997 FI3.3

若等邊三角形的周界和面積分別為 12 cm 和 $\sqrt{3}R$ cm²。求 R 的值。

The perimeter and the area of an equilateral triangle are 12 cm and $\sqrt{3}R$ cm² respectively. Find the value of R.

1999 HI2

如圖，$ABCDEF$ 是一正六邊形及其面積是 $3\sqrt{3}$ cm²。設正方形 $PQRS$ 的面積是 X cm²，求 X 的值。

In the figure, $ABCDEF$ is a regular hexagon with area equal to $3\sqrt{3}$ cm². Let X cm² be the area of the square $PQRS$, find the value of X.
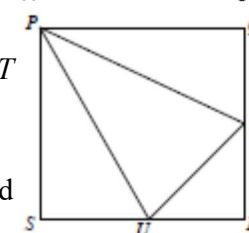
2002 FG2.4

$PQRS$ 為一正方形，PTU 為一等腰三角形及 $\angle TPU = 30°$。T 及 U 分別為 QR 及 RS 上的點。ΔPTU 之面積為 1。

若正方形 $PQRS$ 之面積為 d，求 d 的值。

$PQRS$ is a square, PTU is an isosceles triangle, and $\angle TPU = 30°$. Points T and U lie on QR and RS respectively. The area of ΔPTU is 1. If the area of $PQRS$ is d, find the value of d.

2004 FIS.3

已知一等邊三角形的周界與一個半徑是 $\frac{3}{2}$ cm 的圓的周界相等。

若這三角形的面積是 $R\pi^2$ cm^2，求 R 的值。(答案以根式表示)。

Given that the perimeter of an equilateral triangle equals to that of a circle with radius $\frac{3}{2}$ cm. If the area of the triangle is $R\pi^2$ cm^2, find the value of R.

2005 HI5

如圖一，$ABCDEF$ 是由六個正方形所組成的 "L 形"圖案。HAK 是一直線，陰影部分的面積是 $ABCDEF$ 的面積的 $\frac{1}{2}$。

若各小正方形的邊長是 1 cm，HK 的長度是 m cm，求 m 的值。

In Figure 1, $ABCDEF$ is an "L shape" figure formed by six squares. HAK is a straight line and the area of the shaded region is equal to $\frac{1}{2}$ of the area of $ABCDEF$. If the length of each small square is 1 cm and the length of HK is m cm, find the value of m.

2006 HI2

如圖，一個正六邊形內接於一個圓周為 4 m 的圓內。設該正六邊形的面積是 A m^2，求 A 的值。(取 $\pi = \frac{22}{7}$)

In the figure, a regular hexagon is inscribed in a circle with circumference 4 m. If the area of the regular is A m^2, find the value of A. (Take $\pi = \frac{22}{7}$)

2009 HI2

如圖，給定一正六邊形及一矩形，矩形的頂點是六邊形的四條邊的中點。若矩形與六邊形的面積之比為 $1 : q$，求 q 的值。

In Figure 1, a regular hexagon and a rectangle are given. The vertices of the rectangle are the midpoints of four sides of the hexagon. If the ratio of the area of the rectangle to the area of the hexagon is $1 : q$, find the value of q.
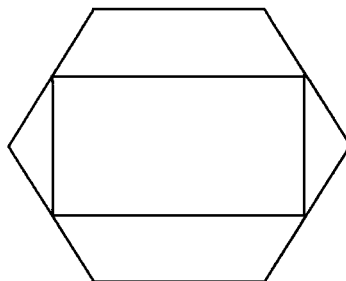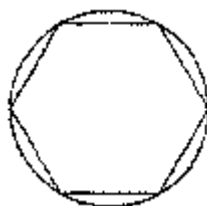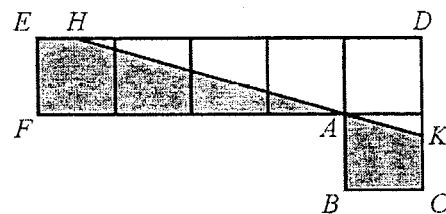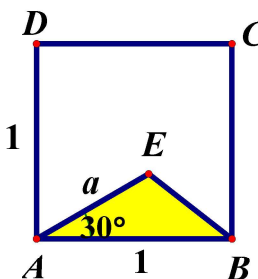
2009 HG8

在圖中，$\angle ACB$ 為直角，$AC = BC = 14$ cm 及 $CE = CF = 6$ cm。若 $CD = d$ cm，求 d 的值。

In the figure, $\angle ABC$ is a right angle, $AC = BC = 14$ cm and $CE = CF = 6$ cm. If $CD = d$ cm, find the value of d.
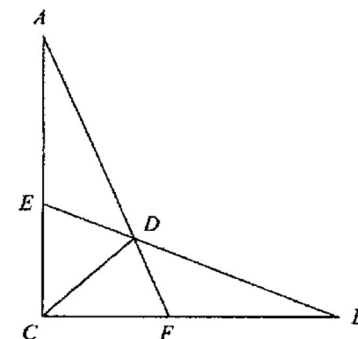
2010 FI4.1

在圖中，$ABCD$ 為一正方形，E 為一點及$\angle EAB = 30°$。若 $ABCD$ 的面積是ΔABE 的面積的六倍，則 $AE : AB = a : 1$。求 a 的值。

In the figure, $ABCD$ is a square, E is a point and $\angle EAB = 30°$. If the area of $ABCD$ is six times that of ΔABE, then the ratio of $AE : AB = a : 1$. Find the value of a.
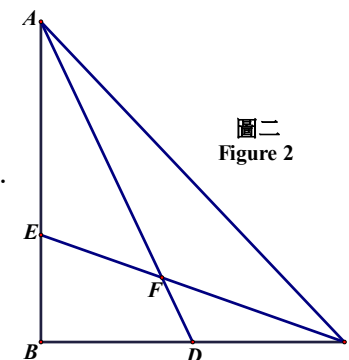
2011 FG2.1

在圖中，兩闊度為 4 及 5 單位的長方形間的夾角為 30°。求重疊部份的面積。

In the figure, two rectangles with widths 4 and 5 units cross each other at 30°. Find the area of the overlapped region.
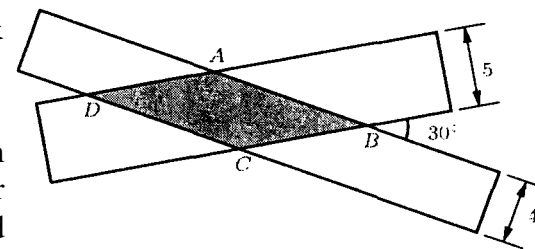
2012 HI10

如圖，$AE = 14$、$EB = 7$、$AC = 29$ 及 $BD = DC = 10$。求 BF^2 的值。

In the figure, $AE = 14$, $EB = 7$, $AC = 29$ and $BD = DC = 10$. Find the value of BF^2.

圖二
Figure 2

2012 FI1.2

設 *x*、*y*、*z*、*w* 為正 12 邊形的四個相連端點。若綫段 *xy* 的長度為 2 及四邊形 *xyzw* 的面積是 $a+\sqrt{b}$，求 $B=2^a\cdot3^b$ 的值。

Let *x*, *y*, *z*, *w* be four consecutive vertices of a regular 12-gon. If the length of the line segment *xy* is 2 and the area of the quadrilateral *xyzw* is $a+\sqrt{b}$, find the value of $B=2^a\cdot3^b$.

2012 FG1.4

在圖一中，Δ*ABC* 是一直角三形且 $AB\perp BC$。若 $AB=BC$，*D* 是一點使得 $AD\perp BD$，且 $AD=5$ 及 $BD=8$，求Δ*BCD* 的面積的值。

In Figure 1, Δ*ABC* is a right-angled triangle with $AB\perp BC$. If $AB=BC$, *D* is a point such that $AD\perp BD$ with $AD=5$ and $BD=8$, find the value of the area of Δ*BCD*.

2014 FI4.3
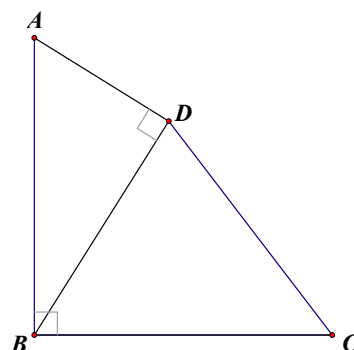
一個等邊三角形和一個正六邊形的周長相同。若該等邊三角形的面積為 5 平方單位，求正六邊形的面積 *γ*(平方單位)。

The perimeters of an equilateral triangle and a regular hexagon are equal. If the area of the triangle is 5 square units, determine the area, *γ*, of the hexagon in square units.

2017 HI15

在圖三中，已知 *ABCDEF* 為正六邊形，且它的面積是 $90\sqrt{3}$，求 *GJ* 的值。

In Figure 3, given that *ABCDEF* is a regular hexagon and its area is $90\sqrt{3}$, find the length of *GJ*.

圖三 Figure 3

2018 HI10
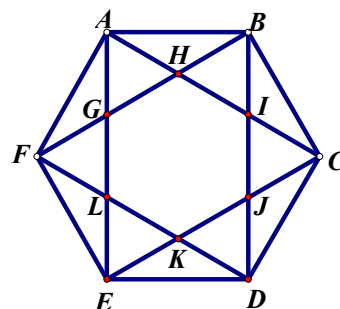
PQR 是一個三角形，其中 $PQ=13$ 、 $QR=14$ 及 $PR=15$ 。以 *PR* 為直徑繪畫出圓 *C*，*C* 相交 *QR* 於點 *T* 。求 Δ*PTR* 的面積。

PQR is a triangle with $PQ=13$, $QR=14$ and $PR=15$. The circle *C* is drawn with diameter *PR* . *C* intersects *QR* at a point *T* . Find the area of Δ*PTR* .

2018 HG10

如圖所示，*ABC* 是一個三角形，其中 $AB=40$、$BC=30$ 及 $\angle ABC=150°$。 *M* 及 *N* 分別為 *AB* 及 *BC* 的中點。$\angle ABC$ 的角平分線分別相交 *MN* 及 *AC* 於 *D* 及 *E*。求 *AMDE* 的面積。

As shown in the figure, *ABC* is a triangle with $AB=40$, $BC=30$ and $\angle ABC=150°$. *M* and *N* are the mid-points of *AB* and *BC* respectively. The angle bisector of $\angle ABC$ intersects *MN* and *AC* at *D* and *E* respectively. Find the area of quadrilateral *AMDE* .

2022 P1Q8

在圖三中，*D* 為四邊形*ABCE* 內的一點使得 $AD\,//\,BC$，$AB\perp AD$，$CD\perp DE$，$CD=ED$，$AD=4\,\text{cm}$ 及 $BC=6\,\text{cm}$。若 Δ*ADE* 的面積為 *P* cm²，求 *P* 的值。

In Figure 3, *D* is a point inside the quadrilateral *ABCE* such that *AD* // *BC*, $AB\perp AD$, $CD\perp DE$, $CD=ED$, $AD=4$ cm and $BC=6$ cm . If *P* cm² is the area of Δ*ADE*, find the value of *P* .
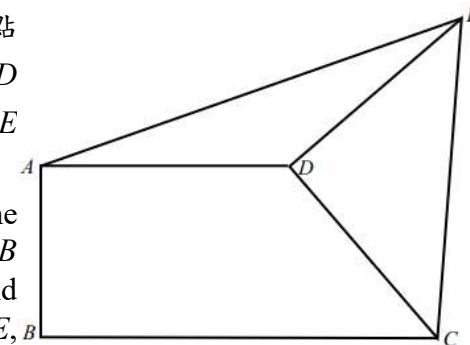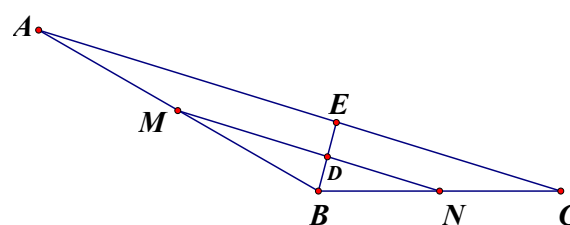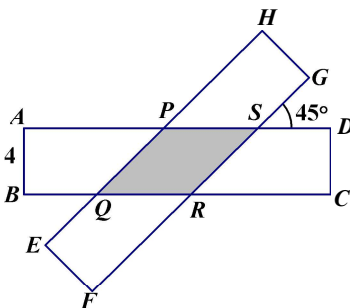
Figure 3 圖三

2023 HI6

在圖中，把長方形 *ABCD* 繞它的中心逆時針轉 45° 得長方形 *EFGH*。

若 *AB* = 4，求陰影部分 *PQRS* 的面積。

In the figure, the rectangle *ABCD* is rotated about its centre 45° anticlockwise to obtain the rectangle *EFGH* .

If *AB* = 4, find the area of the shaded region *PQRS* .

2023 HI8

若一個等邊三角形的面積與其在周界在數值上相等，求該正三角形的外接圓的半徑。

If the area of an equilateral triangle is numerically equal to its perimeter, find the radius of the circumcircle of this equilateral triangle.

Answer

1984 FI4.4 12	1985 FSI.4 1	1986 FSG.3 60	1987 FG6.2 100	1988 FG9.1 60
1989 HI7 45	1991 FSG.3-4 $h = 30, k = 150$	1992 FG8.1 2	1992 FG9.1 6	1995 HG2 132
1996 FI1.1 2016 FI2.1 3	1997 FI3.3 4	1999 HI2 8	2002 FG2.4 3	2004 FSI.3 $\frac{\sqrt{3}}{4}$
2005 HI5 $2\sqrt{6}$	2006 HI2 $\frac{147\sqrt{3}}{242}$	2009 HI2 2	2009 HG8 $\frac{21\sqrt{2}}{5}$	2010 FI4.1 $\frac{2}{3}$
2011 FG2.1 40	2012 HI10 81.64	2012 FI1.2 108	2012 FG1.4 32	2014 FI4.3 7.5
2017 HG15 $4\sqrt{5}$	2018 HI10 54	2018 HG10 $\frac{900}{7}=128\frac{4}{7}$	2022 P1Q8 4	2023 HI6 $16\sqrt{2}$
2023 HI8 4				