2004 HG10

若點 $P(a, b)$ 在直綫 $x - y + 1 = 0$ 上使得點 P 與點 $A(1, 0)$ 之間的距離和點 P 與點 $B(3, 0)$ 之間的距離之和為最小，求 $a + b$ 的值。

Suppose $P(a, b)$ is a point on the straight line $x - y + 1 = 0$ such that the sum of the distance between P and the point $A(1,0)$ and the distance between P and the point $B(3,0)$ is the least, find the value of $a + b$.

2007 HI10

在平面上點 P 的坐標是 $(-3, 4)$。以 $(0, 0)$ 為中心，點 P 順時針方向旋轉 45° 後，再沿 y-軸反射到達點 $Q = (x, y)$。若 $z = x + y$，求 z 的值。

The coordinates of point P on the plane is $(-3, 4)$. After rotating 45° clockwise about the centre $(0, 0)$ and reflecting along the y-axis, the point P reaches the point $Q = (x, y)$. If $z = x + y$, find the value of z .

2007 HG9

在座標平面上，點 $A = (-6, 2)$、$B = (-3, 3)$、$C = (0, n)$ 及 $D = (m, 0)$ 組成一個四邊形 $ABCD$。求 n 的值使得該四邊形 $ABCD$ 的周界為最短。

In the coordinate plane, the points $A = (-6, 2)$, $B = (-3, 3)$, $C = (0, n)$ and $D = (m, 0)$ form a quadrilateral $ABCD$. Find the value of n so that the perimeter of the quadrilateral $ABCD$ is the least.

2007 FG4.2

在座標平面上，點 $A(3, 7)$及 $B(8, 14)$沿直綫 $y = kx + c$ 反射，當中 k 和 c 是常數，其像分別是點 $C(5, 5)$及 $D(12, 10)$。若 $R = \frac{k}{c}$，求 R 的值。

On the coordinate plane, the points $A(3, 7)$ and $B(8, 14)$ are reflected about the line $y = kx + c$, where k and c are constants, their images are $C(5, 5)$ and $D(12,10)$ respectively. If $R = \frac{k}{c}$, find the value of R .

2008 FG1.1

已知座標平面上三點：$O(0, 0)$、$A(12, 2)$ 及 $B(0, 8)$。ΔOAB 經直綫 $y = 6$ 作反射後得ΔPQR。若 ΔOAB 及 ΔPQR 重疊部分的面積是 m 平方單位，求 m 的值。

Given that there are three points on the coordinate plane: $O(0, 0)$, $A(12, 2)$ and $B(0, 8)$. A reflection of ΔOAB along the straight line $y = 6$ creates ΔPQR. If the overlapped area of ΔOAB and ΔPQR is m square units, find the value of m .

2008 FG4.4

在座標平面上，點 $A(6, 8)$繞原點 $O(0, 0)$逆時針轉 20070°至點 $B(p, q)$。求 $p + q$ 的值。

In the coordinate plane, rotate point $A(6, 8)$ about the origin $O(0, 0)$ counter-clockwise for 20070° to point $B(p, q)$. Find the value of $p + q$.

2012 HI3

如圖一，$ABCD$ 為一正方形。B 和 D 的座標分別為 $(5, -1)$ 及 $(-3, 3)$。若 $A(a, b)$位於第一象限內，求 $a + b$ 的值。

In Figure 1, $ABCD$ is a square. The coordinates of B and D are $(5, -1)$ and $(-3, 3)$ respectively. If $A(a, b)$ lies in the first quadrant, find the value of $a + b$.

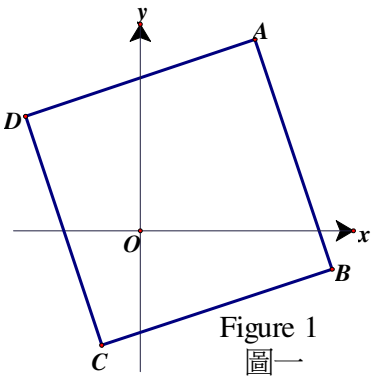
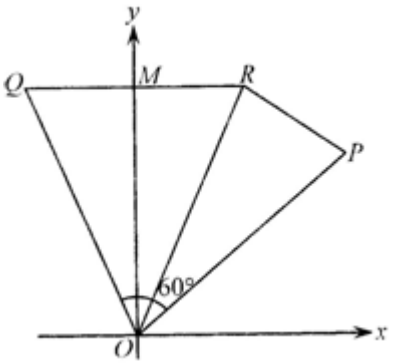


Figure 1
圖一

2015 HG3

點 P 的坐標為 $(\sqrt{3}+1, \sqrt{3}+1)$。設點 P 繞原點作逆時針方向 60° 旋轉至點 Q，接著點 Q 再沿 y-軸反射至點 R。求 PR^2 的值。

The coordinates of P are $(\sqrt{3}+1, \sqrt{3}+1)$. P is rotated 60° anticlockwise about the origin to Q. Q is then reflected along the y-axis to R. Find the value of PR^2 .



Answers

2004 HG10 $\frac{5}{3}$	2007 HI10 $3\sqrt{2}$	2007 HG9 $\frac{4}{3}$	2007 FG4.2 $\frac{1}{2}$	2008 FG1.1 8
2008 FG4.4 2	2012 HI3 8	2015 HG3 4		