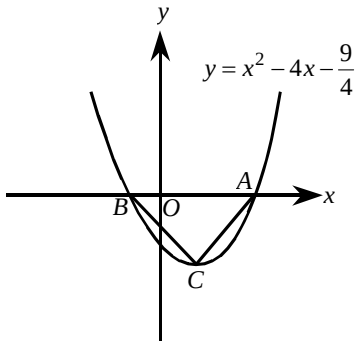
1990 HG7

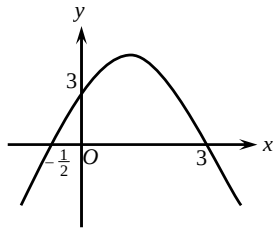


拋物綫 $y=x^2-4x-\frac{9}{4}$ 的圖像交 x-軸於 A 及 B。

若 C 是拋物綫的頂點，求 ΔABC 的面積。

The graph of the parabola $y=x^2-4x-\frac{9}{4}$ cuts the x-axis at A and B (figure 1).
If C is the vertex of the parabola,
find the area of ΔABC.

1992 FG10.1-3



下圖為 $y = ax^2 + bx + c$ 的圖形。

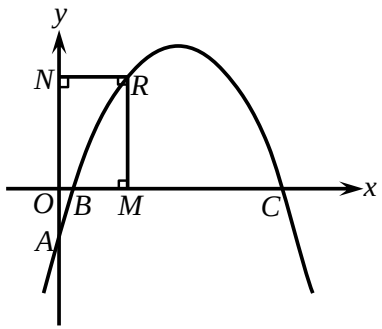
The following shows the graph of $y = ax^2 + bx + c$.

G10.1 求 c 的值。Find the value of c .

G10.2 求 a 的值。Find the value of a .

G10.3 求 b 的值。Find the value of b .

1993 FG6



下圖所示為 $y = px^2 + 5x + p$ 的圖像。

$A = (0, -2)$、$B = \left(\frac{1}{2}, 0\right)$、$C = (2, 0)$、$O = (0, 0)$。

The following shows the graph of $y = px^2 + 5x + p$. $A = (0, -2)$, $B = \left(\frac{1}{2}, 0\right)$, $C = (2, 0)$, $O = (0, 0)$.

G6.1 求 p 的值。Find the value of p.

G6.2 若 y 的最大值為 $\frac{9}{m}$ ，求 m 的值。

If $\frac{9}{m}$ is the maximum value of y, find the value of m .

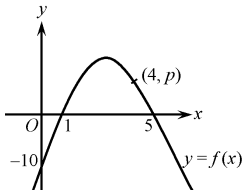
G6.3 Let R be a point on the curve such that $OMRN$ is a square.
If r is the x-coordinate of R, find the value of r .
設 R 為曲綫上一點且 $OMRN$ 為一正方形。若 R 的 x 坐標為 r，求 r 的值。

G6.4 一斜率為 -2 及通過原點的直綫與上述曲綫相交於兩點 E 及 F。

若 EF 中點的 y 坐標為 $\frac{7}{s}$ ，求 s 的值。

A straight line with slope = –2 passes through the origin cutting the curve at two points E and F. If $\frac{7}{s}$ is the y-coordinate of the midpoint of EF, find the value of s .

1996 HG1



圖中二次函數曲綫 $y = f(x)$ 切 x-軸於點 (1, 0) 和 (5, 0)，及 y-軸於點 (0, –10)。求 p 的值。

In the figure, the quadratic curve $y = f(x)$ cuts the x-axis at the two points (1, 0) and (5, 0) and the y-axis at the point (0, –10). Find the value of p .

2000 FG2.3

設曲綫 $y = x^2 – 7x + 12$ 與 x 軸的交點為 A 及 B，而與 y 軸的交點為 C。

如果 c 是 ΔABC 的面積，求 c 的值。

Let the curve $y = x^2 – 7x + 12$ intersect the x-axis at points A and B, and intersect the y-axis at C. If c is the area of ΔABC, find the value of c .

2008 HG9

已知 k、x_1 及 x_2 為正整數且 $x_1 < x_2$。設 A、B 及 C 為曲綫 $y = kx^2$ 上的三點，其 x 坐標分別為 $-x_1$、x_1 及 x_2。

若 ΔABC 的面積是 15 平方單位，求所有可能 k 值的總和。

Given that k, x_1 and x_2 are positive integers with $x_1 < x_2$. Let A, B and C be three points on the curve $y = kx^2$, with x-coordinates being $–x_1$, x_1 and x_2 respectively. If the area of ΔABC is 15 square units, find the sum of all possible values of k .

2016 HG6

設 $y = px^2 + qx + r$ 為一二次函數。已知

(1) y 的對稱軸為 $x = 2016$。

(2) 該函數的圖像通過 x 軸於 A、B 兩點，其中 $AB = 4$ 單位。

(3) 該函數的圖像通過直綫 $y = –10$ 於 C、D 兩點，其中 $CD = 16$ 單位。

求 q 的值。

Let $y = px^2 + qx + r$ be a quadratic function. It is known that

(1) The axis of symmetry of y is $x = 2016$.

(2) The curve cuts the x-axis at two points A and B such that $AB = 4$ units .

(3) The curve cuts the line $y = –10$ at two points C and D such that $CD = 16$.

Find the value of q .

Answers

1990 HG7 $\frac{125}{8}$	1992 FG10.1 3	1992 FG10.2 –2	1992 FG10.3 5	1993 FG6.1 –2
1993 FG6.2 8	1993 FG6.3 1	1993 FG6.4 –2	1996 HG1 6	2000 FG2.3 6
2008 HG9 6	2016 HG6 672			