1986 FI1.2

若不等式 $2x^2 - 6x + 4 < 0$ 之解為 $1 < x < b$，求 b 的值。

If the solution of the inequality $2x^2 - 6x + 4 < 0$ is $1 < x < b$, find the value of b .

1989FG8.4

$3t^2 - 5t - 2 < 0$ 的解是 $-\frac{1}{3} < t < m$。求 m 的值。

The solution for $3t^2 - 5t - 2 < 0$ is $-\frac{1}{3} < t < m$. Find the value of m .

1997 FI1.4

不等式 $x^2 + 5x - 6 \le 0$ 的解為 $d \le x \le 1$。求 d 的值。

The solution of the inequality $x^2 + 5x - 6 \le 0$ is $d \le x \le 1$. Find the value of d .

1997 FI4.2

若不等式 $2x^2 - 9x + 9 < 0$ 的解為 $k < x < b$，求 b 的值。

If the solution of the inequality $2x^2 - 9x + 9 < 0$ is $k < x < b$, find the value of b .

1999 HG1

若 a 是質數，且滿足 $a^2 - 2a - 15 < 0$，求 a 的最大值。

If a is a prime number and $a^2 - 2a - 15 < 0$, find the greatest value of a .

2005 HG8

設 x 為實數。若 h 是 x 的最大值使得 $2(\log_{\frac{1}{2}} x)^2 + 9\log_{\frac{1}{2}} x + 9 \le 0$ ，

求 h 的值。

Let x be a real number. If h is the greatest value of x such that

$2 (\log_{\frac{1}{2}} x)^2 + 9 \log_{\frac{1}{2}} x + 9 \le 0$, find the value of h .

2007 FG1.3

設 P 及 $P + 2$ 均為質數並滿足 $P(P + 2) \le 2007$。

若 S 是符合上述要求的質數 P 的總和，求 S 的值。

Let P and $P + 2$ be both prime numbers satisfying $P(P + 2) \le 2007$.

If S represents the sum of such possible values of P, find the value of S .

2011 FG1.4

若 x 為一整數滿足 $\log_{\frac{1}{4}}(2x+1) < \log_{\frac{1}{2}}(x-1)$，求 x 的最大值。

If x is an integer satisfying $\log_{\frac{1}{4}}(2x+1) < \log_{\frac{1}{2}}(x-1)$,

find the maximum value of x .

2012 HG10

在一集會中，原先安排每位賓客與其他賓客各握手一次，但小明只和他認識的人握手。如果集會中實際握手的總數為 60 次，那麼小明在集會中認識多少人？(註：當兩人相互握手，握手的總次數是一次(而不是兩次)。)

In a gathering, originally each guest will shake hands with every other guest, but Steven only shakes hands with people whom he knows. If the total number of handshakes in the gathering is 60, how many people in the gathering does Steven know? (Note: when two persons shake hands with each other, the total number of handshakes will be one (not two).)

2017 HG8

設正整數 T 能滿足條件：T 的數字的積是 $T^2 - 11T - 23$。

求該等正整數之和，S 的值。

Let positive integers, T, satisfy the condition:

the product of the digits of T is $T^2 - 11T - 23$.

Find the sum S, of all such positive integers.

2019 HG7

設 $f(x) = -6x^2 + 4x \cos\theta + \sin\theta$，其中 $0° \le \theta \le 360°$。已知對所有實數 x，$f(x) \le 0$。若 θ 的最大值與最小值之差為 $d°$，求 d 的值。

Let $f(x) = -6x^2 + 4x \cos\theta + \sin\theta$, where $0° \le \theta \le 360°$. If is given that $f(x) \le 0$ for all real numbers x . If $d°$ is the difference between the greatest and the least values of θ , find the value of d .

Answers

1986 FI1.2 2	1989 FG8.4 2	1997 FI1.4 –6	1997 FI4.2 3	1999 HG1 3
2005 HG8 8	2007 FG1.3 106	2011 FG1.4 3	2012 HG10 5	2017 HG8 13
2019 HG7 120				