

2003 FG4.3

已知 x, y 為兩正整數使 $xy - (x + y) = \text{HCF}(x, y) + \text{LCM}(x, y)$,
其中 $\text{HCF}(x, y)$ 和 $\text{LCM}(x, y)$ 分別是 x 和 y 的最大公因數和最小公倍數。
若 c 是 $x + y$ 的最大可能的值, 求 c 的值。

Given two positive integers x and y , $xy - (x + y) = \text{HCF}(x, y) + \text{LCM}(x, y)$, where $\text{HCF}(x, y)$ and $\text{LCM}(x, y)$ are respectively the greatest common divisor and the least common multiple of x and y . If c is the maximum possible value of $x + y$, find the value of c .

2005 FI1.2

若 $\text{LCM}(40, b) = 280$ 及 $\text{HCF}(40, b) = 10$, 求 b 的值。

If $\text{LCM}(40, b) = 280$ and $\text{HCF}(40, b) = 10$, find the value of b .

2016 FI2.4

若 76 與 d 的最小公倍數(L.C.M.)為 456 及 76 與 d 的最大公因數(H.C.F.)為 4, 求正整數 d 的值。

If the least common multiples (L.C.M.) of 76 and d is 456 and the highest common factor (H.C.F.) of 76 and d is 4, determine the value of the positive integer d .

2016 FG1.2

指示牌上掛有紅、黃、綠閃燈。紅、黃、綠閃燈分別每隔 3 秒、4 秒、8 秒閃爍一次。當 0 秒時, 紅、黃、綠閃燈同時閃爍。若當 Q 秒時, 第三次出現只有紅及黃閃燈同時閃爍, 求 Q 的值。

There are 3 blinking lights, red, yellow and green, on a panel. Red, yellow and green lights blink at every 3, 4 and 8 seconds, respectively. Suppose each light blinks at the time $t = 0$. At time Q (in seconds), there is the third time at which only red and yellow lights blink, determine the value of Q .

2019FG1.3

若 c 是以下數的最大公因數, $3^3 - 3, 5^5 - 5, 7^7 - 7, 9^9 - 9, \dots$,

$2019^{2019} - 2019$, 求 c 的值。

If c is the greatest common factor of the following numbers

$3^3 - 3, 5^5 - 5, 7^7 - 7, 9^9 - 9, \dots, 2019^{2019} - 2019$, determine the value of c .

2023 HG7

整數數列 $\{a_n\}$ 定義為 $a_n = 100 + n^2$, 其中 n 為正整數。設 d_n 為 a_n 和 a_{n+1} 的最大公因數。求 d_n 的最大值。

A sequence of integers $\{a_n\}$ is defined by $a_n = 100 + n^2$, where n is a positive integer. Let d_n be the greatest common divisor of a_n and a_{n+1} .

Find the greatest possible value of d_n .

2023 FG2.3

找出 $10^{12} + 809$ 和 $10^{10} + 8$ 的最大公因數。

Find the greatest common divisor of $10^{12} + 809$ and $10^{10} + 8$.

Answers

2003 FG4.3 10	2005 FI1.2 70	2016 FI2.4 24	2016 FG1.2 60	2019 FG1.3 24
2023 HG7 401	2023 FG2.3 9			