



Playing with Numbers Ex 2.8 Q1

Answer :

We have to find the largest number which divides $(615 - 6)$ and $(963 - 6)$ exactly.
Therefore, the required number = HCF of 609 and 957

Resolving 609 and 957 into prime factors, we have:

$$609 = 3 \cdot 7 \cdot 29$$

$$957 = 3 \cdot 11 \cdot 29$$

$$\text{Therefore, HCF of 609 and 957} = 29 \cdot 3 = 87$$

Hence, the required largest number is 87.

Playing with Numbers Ex 2.8 Q2

Answer :

We have to find the greatest number which divides $(285 - 9)$ and $(1,249 - 7)$ exactly.
The required number will be given by the HCF of 276 and 1242.

Resolving 276 and 1242 into prime factors, we have:

$$276 = 2 \times 2 \times 3 \times 23$$

$$1242 = 2 \times 3 \times 3 \times 3 \times 23$$

$$\therefore \text{HCF of 276 and 1242 is } 2 \times 3 \times 23 = 138.$$

Playing with Numbers Ex 2.8 Q3

Answer :

We have to find the largest number which divides $(626 - 1)$, $(3,127 - 2)$, and $(15,628 - 3)$ exactly.
The required number will be given by the HCF of 625, 3,125 and 15,625.

Resolving 625, 3125, and 15625 into prime factors, we have:

$$625 = 5 \times 5 \times 5 \times 5$$

$$3,125 = 5 \times 5 \times 5 \times 5 \times 5$$

$$15,625 = 5 \times 5 \times 5 \times 5 \times 5 \times 5$$

$$\text{Therefore, HCF of 625, 3125 and 15625} = 5 \times 5 \times 5 \times 5 = 625$$

Hence, the required largest number is 625.

Playing with Numbers Ex 2.8 Q4

Answer :

Given:

Length of the room = 8 m 25 cm = 825 cm

Breadth of the room = 6 m 75 cm = 675 cm

Height of the room = 4 m 50 cm = 450 cm

The longest rod will be given by the HCF of 825, 675 and 450.

Prime factorisation of 825 = $3 \times 5 \times 5 \times 11$

Prime factorisation of 675 = $3 \times 3 \times 3 \times 5 \times 5$

Prime factorisation of 450 = $2 \times 3 \times 3 \times 5 \times 5$

Therefore, HCF of 825, 675 and 450 = $3 \times 5 \times 5 = 75$

Thus, the required length of the longest rod is 75 cm.

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