Playing with Numbers Ex 2.10 Q7

Answer :

First, we have to find the LCM of 8, 15, and 21.

Prime factorisation of 8 = 2 × 2 × 2
Prime factorisation of 15 = 3 × 5
Prime factorisation of 21 = 3 × 7
Therefore, required LCM = 2 × 2 × 2 × 3 × 5 × 7 = 840.

The number nearest to 1,00,000 and exactly divisible by each of 8, 15, and 21 should also be exactly divisible by their LCM (i.e. 840).

We have to divide 1,00,000 by 840.

$$\begin{array}{r|l} 840 & 100000 \\ \cline{2-2} & 119 \\ \hline 840 & \\ \hline 1600 & \\ 840 & \\ \hline 7600 & \\ 7560 & \\ \hline 40 & \end{array}$$

Remainder = 40
∴ Number just greater than 1,00,000 and exactly divisible by 840 = 1,00,000 + (840 − 40)
= 1,00,000 + 800 = 1,00,800
∴ Required number = 1,00,800

Playing with Numbers Ex 2.10 Q8

Answer :

First bus stop at which both the buses will stop together = LCM of 6th block and 8th block

Prime factorisation of 6 = 2 × 3
Prime factorisation of 8 = 2 × 2 × 2
∴ Required LCM = 2 × 2 × 2 × 3 = 24
Hence, the first bus stop at which both the buses will stop together will be at the 24th block.

Playing with Numbers Ex 2.10 Q9

Answer :

We have to find the LCM of 220 m and 300 m.

Prime factorisation of 220 = 2 × 2 × 5 × 11
Prime factorisation of 300 = 2 × 2 × 3 × 5 × 5
∴ Required LCM = 2 × 2 × 3 × 5 × 5 × 11 = 3,300

Hence, 3,300 m far is the next heap that lies at the foot of a pole.

Playing with Numbers Ex 2.10 Q10

Answer :

First, we have to find the LCM of 28 and 32.
Prime factorisation of 28 = 2 × 2 × 7
Prime factorisation of 32 = 2 × 2 × 2 × 2 × 2
∴ Required LCM = 2 × 2 × 2 × 2 × 2 × 7 = 224

It is given that when we divide the number by 28, the remainder is 8 and when we divide the number by 32, the remainder is 12.
We observe:
28 − 8 = 20
32 − 12 = 20
∴ Required number = 224 − 20 = 204

********** END **********