Real Numbers Ex 1.4 Q11

Answer :

GIVEN: A circular field has a circumference of 360 km. Three cyclists start together and can cycle 48, 60, and 72 km a day, round the field.
TO FIND: When they meet again.

In order to calculate the time when they meet, we first find out the time taken by each cyclist in covering the distance.

Number of days 1st cyclist took to cover 360 km = $\frac{\text{Total distance}}{\text{Distance covered in 1 day}} = \frac{360}{48} = 7.5 = \frac{75}{10} = \frac{15}{2}$ days

Similarly, number of days taken by 2nd cyclist to cover same distance = $\frac{360}{60} = 6$ days

Also, number of days taken by 3rd cyclist to cover this distance = $\frac{360}{72} = 5$ days

Now, LCM of $\left(\frac{15}{2}, 6 \text{ and } 5\right) = \frac{\text{LCM of numerators}}{\text{HCF of denominators}} = \frac{30}{1} = 30$ days

Thus, all of them will take 30 days to meet again.

Real Numbers Ex 1.4 Q12

Answer :

GIVEN: LCM and HCF of two numbers are 180 and 6 respectively. If one number is 30
TO FIND: Other number
We know that,

$$\text{L.C.M} \times \text{H.C.F} = \text{First Number} \times \text{Second Number}$$

$$180 \times 6 = 30 \times \text{Second Number}$$

$$\text{Second Number} = \frac{180 \times 6}{30}$$

$$\boxed{\text{Second Number} = 36}$$

Real Numbers Ex 1.4 Q13

Answer :

GIVEN: HCF of two numbers is 16. If product of numbers is 3072
TO FIND: L.C.M of numbers
We know that,

$$\text{L.C.M} \times \text{H.C.F} = \text{First Number} \times \text{Second Number}$$

$$\text{L.C.M} \times 16 = 3072$$

$$\text{L.C.M} = \frac{3072}{16}$$

$$\boxed{\text{L.C.M} = 192}$$

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