



Squares and Square Roots Ex 3.4 Q9

Answer :

Let M be the number of members.

Let r be the amount in paise donated by each member.

The total contribution can be expressed as follows:

$$M \times r = \text{Rs } 92.16 = 9216 \text{ paise}$$

Since the amount received as donation is the same as the number of members:

$$\therefore r = M$$

Substituting this in the first equation, we get:

$$M \times M = 9216$$

$$M^2 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3$$

$$M^2 = (2 \times 2) \times (2 \times 2) \times (2 \times 2) \times (2 \times 2) \times (2 \times 2) \times (3 \times 3)$$

$$M = 2 \times 2 \times 2 \times 2 \times 2 \times 3 = 96$$

To find r , we can use the relation $r = M$.

Let M be the number of members.

Let r be the amount in paise donated by each member.

The total contribution can be expressed as follows:

$$M \times r = \text{Rs } 92.16 = 9216 \text{ paise}$$

Since the amount received as donation is the same as the number of members:

$$\therefore r = 96$$

So, there are 96 members and each paid 96 paise.

Squares and Square Roots Ex 3.4 Q10

Answer :

Let S be the number of students.

Let r be the money donated by each student.

The total contribution can be expressed by $(S)(r) = \text{Rs } 2304$

Since each student paid as many paise as the number of students, then $r = S$. Substituting this in the first equation, we get:

$$S \times S = 2304$$

$$S^2 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3$$

$$S^2 = (2 \times 2) \times (2 \times 2) \times (2 \times 2) \times (2 \times 2) \times (3 \times 3)$$

$$S = 2 \times 2 \times 2 \times 2 \times 3 = 48$$

So, there are 48 students in total in the school.

Squares and Square Roots Ex 3.4 Q11

Answer :

First, we have to find the perimeter of the square.

The area of the square is r^2 , where r is the side of the square.

Then, we have the equation as follows:

$$r^2 = 5184 = (2 \times 2) \times (2 \times 2) \times (2 \times 2) \times (3 \times 3) \times (3 \times 3)$$

Taking the square root, we get $r = 2 \times 2 \times 2 \times 3 \times 3 = 72$

Hence the perimeter of the square is $4 \times r = 288$ m

Now let L be the length of the rectangular field.

Let W be the width of the rectangular field.

The perimeter is equal to the perimeter of square.

Hence, we have:

$$2(L + W) = 288$$

Moreover, since the length is twice the width:

$$L = 2 \times W.$$

Substituting this in the previous equation, we get:

$$2 \times (2 \times W + W) = 288$$

$$3 \times W = 144$$

$$W = 48$$

To find L :

$$L = 2 \times W = 2 \times 48 = 96$$

$$\therefore \text{Area of the rectangular field} = L \times W = 96 \times 48 = 4608 \text{ m}^2$$

Squares and Square Roots Ex 3.4 Q12

Answer :

(i) The smallest number divisible by 6, 9, 15 and 20 is their L.C.M., which is equal to 60.

Factorising 60 into its prime factors:

$$60 = 2 \times 2 \times 3 \times 5$$

Grouping them into pairs of equal factors:

$$60 = (2 \times 2) \times 3 \times 5$$

The factors 3 and 5 are not paired. To make 60 a perfect square, we have to multiply it by 3×5 , i.e. by 15.

The perfect square is 60×15 , which is equal to 900.

(ii) The smallest number divisible by 8, 12, 15 and 20 is their L.C.M., which is equal to 120.

Factorising 120 into its prime factors:

$$120 = 2 \times 2 \times 2 \times 3 \times 5$$

Grouping them into pairs of equal factors:

$$120 = (2 \times 2) \times 2 \times 3 \times 5$$

The factors 2, 3 and 5 are not paired. To make 120 into a perfect square, we have to multiply it by $2 \times 3 \times 5$, i.e. by 30.

The perfect square is 120×30 , which is equal to 3600.

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