## 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:
$M \times r$ = Rs 92.16 = 9216 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:
$M \times M = 9216$
$M^2 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3$
$M^2 = (2 \times 2) \times (2 \times 2) \times (2 \times 2) \times (2 \times 2) \times (2 \times 2) \times (3 \times 3)$
$M = 2 \times 2 \times 2 \times 2 \times 2 \times 3 = 96$
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:
$M \times r$ = Rs 92.16 = 9216 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 $(S)(r)$ = 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 $L$:
$L = 2 \times W = 2 \times 48 = 96$
$\therefore$ Area of the rectangular field = $L \times W = 96 \times 48 = 4608$ 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 x 5, i.e . by15.
The perfect square is 60 x 15, which is equal to 900.

(i) 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 x 3 x 5, i.e. by 30.
The perfect square is 120 x 30, which is equal to 3600.

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