



Squares and Square Roots Ex 3.9 Q18

Answer :

We have to find $\sqrt{21.97}$.

From the square root table, we have:

$$\sqrt{21} = \sqrt{3} \times \sqrt{7} = 4.583 \text{ and } \sqrt{22} = \sqrt{2} \times \sqrt{11} = 4.690$$

Their difference is 0.107.

Thus, for the difference of 1 (22 - 21), the difference in the values of the square roots is 0.107.

For the difference of 0.97, the difference in the values of their square roots is:

$$0.107 \times 0.97 = 0.104$$

$$\therefore \sqrt{21.97} = 4.583 + 0.104 \approx 4.687$$

Squares and Square Roots Ex 3.9 Q19

Answer :

$$\sqrt{110} = \sqrt{2} \times \sqrt{5} \times \sqrt{11}$$

$$= 1.414 \times 2.236 \times 3.317 \quad (\text{Using the square root table to find all the square roots})$$

$$= 10.488$$

Squares and Square Roots Ex 3.9 Q20

Answer :

$$\sqrt{1110} = \sqrt{2} \times \sqrt{3} \times \sqrt{5} \times \sqrt{37}$$

$$= 1.414 \times 1.732 \times 2.236 \times 6.083 \quad (\text{Using the table to find all the square roots})$$

$$= 33.312$$

Squares and Square Roots Ex 3.9 Q21

Answer :

We have:

$$\sqrt{11} = 3.317 \text{ and } \sqrt{12} = 3.464$$

Their difference is 0.1474.

Thus, for the difference of 1 (12 - 11), the difference in the values of the square roots is 0.1474.

For the difference of 0.11, the difference in the values of the square roots is:

$$0.11 \times 0.1474 = 0.0162$$

$$\therefore \sqrt{11.11} = 3.3166 + 0.0162 = 3.328 \approx 3.333$$

Squares and Square Roots Ex 3.9 Q22

Answer :

The length of one side of the square field will be the square root of 325.

$$\therefore \sqrt{325} = \sqrt{5 \times 5 \times 13}$$

$$= 5 \times \sqrt{13}$$

$$= 5 \times 3.605$$

$$= 18.030$$

Hence, the length of one side of the field is 18.030 m.

Squares and Square Roots Ex 3.9 Q23

Answer :

The area of the rectangle = $240 \text{ m} \times 70 \text{ m} = 16800 \text{ m}^2$

Given that the area of the square is equal to the area of the rectangle.

Hence, the area of the square will also be 16800 m^2 .

The length of one side of a square is the square root of its area.

$$\begin{aligned}\therefore \sqrt{16800} &= \sqrt{2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 5 \times 5 \times 7} \\ &= 2 \times 2 \times 5 \sqrt{2 \times 3 \times 7} \\ &= 20\sqrt{42} \text{ m} = 129.60 \text{ m}\end{aligned}$$

Hence, the length of one side of the square is 129.60 m

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