Squares and Square Roots Ex 3.6 Q2

Answer :

(i) We have:

$$\frac{\sqrt{80}}{\sqrt{405}}=\sqrt{\frac{80}{405}}=\sqrt{\frac{16}{81}}=\frac{\sqrt{16}}{\sqrt{81}}=\frac{4}{9}$$

(ii) Computing the square roots:

$$\sqrt{441}=\sqrt{(3\times3)\times(7\times7)}=3\times7=21$$

$$\sqrt{625}=\sqrt{(5\times5)\times(5\times5)}=5\times5=25$$

$$\therefore\frac{\sqrt{441}}{\sqrt{625}}=\frac{21}{25}$$

(iii) We have:

$$\frac{\sqrt{1587}}{\sqrt{1728}}=\sqrt{\frac{529}{576}}$$ (by dividing both numbers by 3)

Computing the square roots of the numerator and the denominator:

$$\sqrt{529}=\sqrt{23\times23}=23$$

$$\sqrt{576}=\sqrt{24\times24}=24$$

$$\therefore\frac{\sqrt{1587}}{\sqrt{1728}}=\frac{23}{24}$$

(iv) We have:

$$\sqrt{72}\times\sqrt{338}=\sqrt{72\times338}=\sqrt{2\times2\times2\times3\times3\times2\times13\times13}$$

$$=\sqrt{2\times2\times2\times2\times3\times3\times13\times13}\quad=2\times2\times3\times13$$

$$=156$$

(v) We have:

$$\sqrt{45}\times\sqrt{20}=\sqrt{3\times3\times5\times2\times2\times5}$$

$$=\sqrt{3\times3\times2\times2\times5\times5}$$

$$=30$$

Squares and Square Roots Ex 3.6 Q3

Answer :

The length of one side is the square root of the area of the field. Hence, we need to calculate the value of $\sqrt{80\frac{244}{729}}$

We have

$$\sqrt{80\frac{244}{729}} = \sqrt{\frac{58564}{729}} = \frac{\sqrt{58564}}{\sqrt{729}}$$

Now, to calculate the square root of the numerator and the denominator:

	242
2	58564
2	4
44	185
4	176
482	964
2	964
	0

We know that:

$\sqrt{729} = 27$

Therefore, length of one side of the field $= \frac{242}{27} = 8\frac{26}{27}\ m$

Squares and Square Roots Ex 3.6 Q4

Answer :

The length of one side is equal to the square root of the area of the field. Hence, we just need to calculate the value of $\sqrt{30\frac{1}{4}}$.

We have:

$$\sqrt{30\frac{1}{4}} = \frac{\sqrt{121}}{\sqrt{4}}$$

Now, calculating the square root of the numerator and the denominator:

$\sqrt{121} = \sqrt{11 \times 11} = 11$

$\sqrt{4} = 2$

Therefore, the length of the side of the square $= \sqrt{30\frac{1}{4}} = \frac{11}{2} = 5\frac{1}{2}$ m

Squares and Square Roots Ex 3.6 Q5

Answer :

The area of the playground = 72 × 338 = 24336 m^2

The length of one side of a square is equal to the square root of its area. Hence, we just need to find the square root of 24336.

	156
1	24336
1	1
25	143
5	125
306	1836
6	1836
	0

Hence, the length of one side of the playground is 156 metres.

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