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:

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

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:

$$\sqrt{72}\times\sqrt{338} = \sqrt{72\times338} = \sqrt{2\times2\times2\times3\times3\times2\times13\times13}$$
$$= \sqrt{2\times2\times2\times2\times3\times3\times13\times13} = 2\times2\times3\times13$$
$$= 156$$

(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 m²
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 *********