

TEXT BOOK EXERCISE 5.4

Q. 1. Find the square root of the following decimal numbers.

- (i) 9.61 (ii) 11.56 (iii) 466.56
 (iv) 1.4641 (v) 1354.24 (vi) 1.218816

Solution. (i)
$$\begin{array}{r} 3.1 \\ 3 \overline{) 9.61} \\ \underline{-9} \\ 61 \\ 61 \\ \underline{-61} \\ 0 \end{array}$$

$\therefore \sqrt{9.61} = 3.1 \text{ Ans.}$

(ii)
$$\begin{array}{r} 3.4 \\ 3 \overline{) 11.56} \\ \underline{-9} \\ 256 \\ 256 \\ \underline{-256} \\ 0 \end{array}$$

$\therefore \sqrt{11.56} = 3.4 \text{ Ans.}$

(iii)
$$\begin{array}{r} 21.6 \\ 2 \overline{) 466.56} \\ \underline{4} \\ 41 \\ \underline{-41} \\ 426 \\ \underline{-426} \\ 0 \end{array}$$

$\therefore \sqrt{466.56} = 21.6 \text{ Ans.}$

(iv)
$$\begin{array}{r} 1.21 \\ 1 \overline{) 1.4641} \\ \underline{-1} \\ 22 \\ \underline{-22} \\ 241 \\ \underline{-241} \\ 0 \end{array}$$

$\therefore \sqrt{1.4641} = 1.21 \text{ Ans.}$

$$\begin{array}{r}
 36.8 \\
 3 \overline{) 1354.24} \\
 \underline{-9} \\
 66 \\
 \underline{-454} \\
 728 \\
 \underline{-5824} \\
 0
 \end{array}$$

$$\therefore \sqrt{1354.24} = 36.8 \text{ Ans.}$$

$$\begin{array}{r}
 1.104 \\
 1 \overline{) 1.218816} \\
 \underline{-1} \\
 21 \\
 \underline{-21} \\
 2204 \\
 \underline{-8816} \\
 0
 \end{array}$$

$$\therefore \sqrt{1.218816} = 1.104 \text{ Ans.}$$

Q. 2. Find the square root of the followings :

$$(i) \frac{64}{169}$$

$$(ii) \frac{144}{441}$$

$$(iii) \frac{81}{784}$$

$$(iv) \frac{196}{625}$$

$$\text{Solution. (i) } \sqrt{\frac{64}{169}} = \frac{\sqrt{64}}{\sqrt{169}} = \frac{8}{13} \text{ Ans.}$$

$$\begin{array}{r}
 8 \\
 8 \overline{) 64} \\
 \underline{-64} \\
 0
 \end{array}
 \qquad
 \begin{array}{r}
 13 \\
 1 \overline{) 169} \\
 \underline{-1} \\
 23 \\
 \underline{-69} \\
 0
 \end{array}$$

$$(ii) \sqrt{\frac{144}{441}} = \frac{\sqrt{144}}{\sqrt{441}} = \frac{12}{21} \text{ Ans.}$$

$$\begin{array}{r}
 12 \\
 1 \overline{) 144} \\
 \underline{-1} \\
 22 \\
 \underline{-44} \\
 0
 \end{array}$$

$$\begin{array}{r}
 21 \\
 1 \overline{) 441} \\
 \underline{-4} \\
 41 \\
 \underline{-41} \\
 0
 \end{array}$$

$$(iii) \sqrt{\frac{81}{784}} = \frac{\sqrt{81}}{\sqrt{784}} = \frac{9}{28} \text{ Ans.}$$

$$\begin{array}{r}
 9 \\
 9 \overline{) 81} \\
 \underline{-81} \\
 0
 \end{array}$$

$$\begin{array}{r}
 28 \\
 2 \overline{) 784} \\
 \underline{-4} \\
 48 \\
 \underline{-384} \\
 0
 \end{array}$$

$$(iv) \sqrt{\frac{196}{625}} = \frac{\sqrt{196}}{\sqrt{625}} = \frac{14}{25} \text{ Ans.}$$

$$\begin{array}{r}
 14 \\
 1 \overline{) 196} \\
 \underline{-1} \\
 24 \\
 \underline{-96} \\
 0
 \end{array}$$

$$\begin{array}{r}
 25 \\
 2 \overline{) 625} \\
 \underline{-4} \\
 45 \\
 \underline{-225} \\
 0
 \end{array}$$

Q. 3. Find the square root of 2, 3 and 5 upto three digits of decimals.

Solution. (i)

$$\begin{array}{r}
 1.414 \\
 1 \overline{) 2.000000} \\
 \underline{-1} \\
 24 \\
 \underline{-100} \\
 281 \\
 \underline{-400} \\
 2824 \\
 \underline{-11296} \\
 604
 \end{array}$$

$$\text{Square root of } 2 = \sqrt{2} = 1.414 \text{ Ans.}$$

(ii)

1	1.732 3.000000 - 1
27	200 - 189
343	1100 - 1029
3462	7100 - 6924
	176

Square root of 3 = $\sqrt{3} = 1.732$ Ans.

(iii)

2	2.236 5.000000 - 4
42	100 - 84
443	1600 - 1329
4466	27100 - 26796
	404

Square root of 5 = $\sqrt{5} = 2.236$ Ans.

Q. 4. Multiple choice questions :

(i) Choose the correct way of placing bars from following :

(a) $\sqrt{15625}$ (b) $\sqrt{15625}$

(c) $\sqrt{15625}$ (d) $\sqrt{15625}$

(ii) After how many places decimal will appear in square root of 24.01.

(a) 1 (b) 2

(c) 3 (d) 4.

(iii) Find square root of 39.0625.

(a) 6.25 (b) 62.5

(c) 0.625 (d) 6.6251

(iv) Find the length of hypotenuse of a right triangle having other two sides as 6 cm and 8 cm.

(a) 6 cm (b) 8 cm

(c) 10 cm (d) 10 cm².

Ans. (i) (a) $\sqrt{15625}$

(ii) (a) 1

(iii) (a) 6.25

(iv) (c) 10 cm.

Objective Type Questions

1. Multiple Choice Questions :

(i) How many natural numbers lie between n^2 and $(n + 1)^2$?

(a) $2n$ (b) $2n - 1$

(c) $2n + 1$ (d) n^2 .

Ans. (a) $2n$.

(ii) Which of the following numbers will have 4 at the unit's place ?

(a) 14^2 (b) 62^2

(c) 27^2 (d) 35^2 .

Ans. (b) 62^2 .

(iii) The square of which of the following numbers is an even number ?

(a) 431 (b) 8204

(c) 2825 (d) 533.

Ans. (b) 8204.

(iv) Which of the following is not a Pythagorean triplet ?

(a) 3,4,5 (b) 6,8,10

(c) 5,12,13 (d) 2,3,4.

Ans. (d) 2,3,4.

(v) 2025 plants are to be planted in a garden in such a way that each row contains as many plants as the number of rows. Find the number of rows :

(a) 45 (b) 55

(c) 35 (d) 25.

Ans. (a) 45.

(vi) If the unit digit of a number is 9 then what will be unit digit of the square of this number ?

(a) 1 (b) 2

(c) 3 (d) 9.

Ans. (a) 1.

(vii) Which of the following number is a perfect square ?

- (a) 626 (b) 186
(c) 675 (d) 529.

Ans. (d) 529.

(viii) What is the number of natural number between the square of 12 and square of 13 ?

- (a) 23 (b) 24
(c) 25 (d) 1.

Ans. (b) 24.

(ix) Give square root of 4225.

- (a) 55 (b) 65
(c) 64 (d) 45.

Ans. (b) 65.

(x) $1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 = \dots\dots$

- (a) 15 (b) 225
(c) 8 (d) 64.

Ans. (d) 64.

2. Choose True/False for the following questions :

(i) 32 is a square number. (True/False)

Ans. False.

(ii) The number ending with 0,1,4,5,6 or 9 may or may not be a square number.

(True/False)

Ans. True.

(iii) If the digit at ones place of an number is 1 or 9, then in the unit's digit of the square of that number is also 1. .

(True/False)

Ans. True.

(iv) Square of a number 12 is 140.

(True/False)

Ans. False.

(v) Square root of 144 is 12. (True/False)

Ans. True.

3. Fill in the blanks :

(i) If a natural number m can be expressed as n^2 , where n is also a natural number, m is a number.

Ans. square.

(ii) Unit digit in perfect are 0,1,4,6.

Ans. square.

(iii) Square numbers can only have numbers of zeroes at the end.

Ans. even.

(iv) Square of 15 is

Ans. 225.

(v) Square root of 625 is

Ans. 25.