Unit 5

SQUARE ROOT OF POSITIVE NUMBER

EXERCISE NO. 5.1

A. Find squares of following:

(i) (11):

Solution:

$= (11)^2$

$= (11)^2 = 11 \times 11 = 121$

Ans: $= 121$

(ii) 19:

Solution:

$= (19)^2$

$= 19 \times 19 = 361$

Ans: $= 361$

(iii) 25:

Solution:

$= (2.5)^2$

$= 25 \times 25 = 625$

Ans: $= 625$

(iv) 50:

Solution:

$= (50)^2$

$= 50 \times 50 = 2500$

Ans: $= 2500$

(v) 78:

Solution:

$= (78)^2$

$= 78 \times 78 = 6084$

Ans: $= 6084$

(vi) 66:

Solution:

$= (66)^2$

$= 66 \times 66 = 4356$

Ans: $= 4356$

(vii) 100:

Solution:

$= (100)^2$

$= 100 \times 100 = 1000$

Ans: $= 1000$

(viii) 500:

Solution:

$= (500)^2$

$= 500 \times 500 = 25000$

Ans: $= 25000$

B. Test whether each of following is perfect sqr or not.

(i) 81:

Solution:

$= 81$

$= 9 \times 9 = 81$

Ans: Perfect Square

(ii) 95:

Ans: Not perfect Square

(iii) 121:

Solution:

$= 11 \times 11 = 121$

Ans: Perfect Square

(iv) 169:

Solution:

$= 169$

$= 13 \times 13 = 169$

Ans: Perfect Square

13	169
13	13
	1

(v) 224:

Ans: Perfect Squrare

(vi) 3969:

Ans: Not Perfect Square

(vii) 3872:

Ans: Not Perfect Square

(viii)9845:

Ans: Not perfect Square

5	9845
3	1969
	657

C. Separate the perfect square of even and odd number.

(i) 9:

Solution:

$= 9$

$= 3 \times 3 = 9$

Ans: Perfect Square of odd number

(ii) 25:

Solution:

$= 25$

$= 5 \times 5 = 25$

Ans: Perfect Square of odd number

(iii) 196:

Solution:

$= 196$

$= 14 \times 14 = 196$

Ans: Perfect Square of even number

(iv) 441:

Solution:

$= 441$

$= 21 \times 21 = 441$

Ans: Perfect Square of odd number

(v) 2704:

Solution:

$= 2704$

$= 42 \times 42 = 2704$

Ans: Perfect Square of even number

2	2704
2	1352
2	676
2	328
2	164
2	82

(vi) 3600:

Solution:

$= 3600$

$= 60 \times 60 = 3600$

Ans: = Perfect Square of even number

(vii) 9216:

Solution:

$= 9216$

$= 96 \times 96 = 9216$

Ans: = Perfect Square even number

(viii) 9801:

Solution:

$= 9801$

$= 99 \times 99 = 9801$

Ans: = Perfect of odd numbers

3	9801
3	3267
3	189
3	63
3	21
	1

D. Find the square of the following proper fraction and compare with them selves.

(i) $\frac{1}{5}$:

Solution:

$$= \left(\frac{1}{5}\right)^2 = \left[\frac{1}{5}\right] \times \left[\frac{1}{5}\right]$$

$$= \frac{1 \times 1}{5 \times 5} = \frac{1}{25}$$

Ans: $= \frac{1}{25}$ and $\frac{1}{25} < \frac{1}{5}$

(ii) $\frac{3}{7}$:

Solution:

$$= \left(\frac{3}{7}\right)^3 = \left(\frac{3}{7}\right) \times \left(\frac{3}{7}\right)$$

$$= \frac{3 \times 3}{7 \times 7} = \frac{9}{49}$$

Ans: $= \frac{9}{49}$ and $\frac{9}{49} < \frac{3}{7}$

(iii) $\frac{8}{9}$:

Solution:

$$= \left(\frac{8}{9}\right)^2 = \left(\frac{8}{9}\right) \times \left(\frac{8}{9}\right)$$

$$= \frac{8 \times 8}{9 \times 9} = \frac{64}{81}$$

Ans: $= \frac{64}{81}$ and $\frac{64}{81} < \frac{8}{9}$

(iv) $\frac{5}{6}$:

Solution:

$$= \left(\frac{5}{6}\right)^2 = \left(\frac{5}{6}\right) \times \left(\frac{5}{6}\right)$$

$$= \frac{5 \times 5}{6 \times 6} = \frac{25}{36}$$

Ans: $= \frac{25}{36}$ and $\frac{25}{36} < \frac{5}{6}$

(v) $\frac{2}{3}$:

Solution:

$$= \left(\frac{2}{3}\right)^2 = \left(\frac{2}{3}\right) \times \left(\frac{2}{3}\right)$$

$$= \frac{2 \times 2}{3 \times 3} = \frac{4}{9}$$

Ans: $= \frac{4}{9}$ and $\frac{4}{9} < \frac{2}{3}$

E. Find the square of the following decimal numbers and compare with themselves.

(i) 0.1:

Solution:

$$= (0.1)^2 = (0.1) \times (0.1)$$

$$= 0.01$$

Ans: $= 0.01$ and $0.01 < 0.1$

(ii) 0.5:

Solution:

$$= (0.5)2 = (0.5) \times (0.5)$$

$$= \frac{5}{10} \times \frac{5}{10} = \frac{25}{100}$$

$$= \frac{25}{100} = 0.025$$

$$= 0.025$$

Ans: $= 0.025,\ 0.25 < 0.5$

(iii) 0.07:

Solution:

$$= (0.07)^2 = (0.07) \times (0.07)$$

$$= \frac{7}{100} \times \frac{7}{100} = \frac{49}{10000} = 0.0049$$

$$= 0.0049$$

Ans: $= 0.0049$ and $0.0049 < 0.7$

(iv) 0.11:

Solution:

$$= (0.11)^2 = (0.11) \times (0.11)$$

$$= \frac{11}{100} \times \frac{11}{100} = \frac{121}{10000}$$

$$= \frac{121}{10000}$$

$$= \frac{121}{10000} = 0.0121$$

$$= 0.0121$$

Ans: $= 0.0121 < 0.11$

(v) 0.15:

Solution:

$$= (0.15)^2 = (0.15) \times (0.15)$$

$$= \frac{15}{100} \times \frac{15}{100} = \frac{225}{10000}$$

$$= \frac{225}{10000} = 0.0225$$

$$= 0.0225$$

Ans: $= 0.0225$ and $0.0225 < 0.15$

EXERCISE 5.2

A. Find square root of each fo the following:

(i) 81:

Solution:

9	81
9	9
	1

$$= \sqrt{81} = \sqrt{9 \times 9} = 9.$$

Ans: $= 9$

(ii) $(4)^2$:

Solution:

$$= (4)^2 = 4 \times 4 = 16$$

4	16
4	4
	1

$$= \sqrt{16} = \sqrt{4 \times 4} = 4$$

Ans: $= 4$

(iii) 81:

Solution:

9	81
9	9
	1

$= \sqrt{81} = \sqrt{9 \times 9} = 9$

Ans: $= 9$

(iv) $(36)^2$:

Solution:

$= (36)^2 = 36 \times 36 = 1296$

2	1296
2	648
3	324
3	18
	4

$= \sqrt{1296} = \sqrt{2 \times 2 \times 3 \times 3} = \sqrt{2 \times 3} = 6$

Ans: $= 5$

(v) a^2:

Solution:

$= (a)^2 = a \times a$

$= \sqrt{a \times a} = a$

Ans: $= a$

(vi) y^2:

Solution:

$= (y)^2 = y \times y$

$= \sqrt{y \times y} = y$

Ans: $= y$

(vii) $(49)^2$:

Solution:

$= (49)^2 = 49 \times 49 = 2401$

$= \sqrt{2401} = \sqrt{49 \times 49} = 49$

Ans: $= 49$

(viii) 64:

Solution:

$= 64 = 2 \times 2 \times 2 \times 2 \times 2 \times 2$

2	64
2	32
2	16
2	8
2	4
2	2
	1

$= \sqrt{64} = \sqrt{2\times2\times2\times2\times2\times2}$

$= 2 \times 2 \times 2 = 8$

Ans: $= 8$

B. Find square root by factorization and division method.

(i) 676:

Solution:

Factorization

2	676
2	338
13	169
13	13
	1

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

$= 2 \times 13 = 26$

Division Method

	26
2	676
+ 2	4
46	276
6	276
52	0

$= \sqrt{676} = 26$

Ans: $= 26$

(ii) 169:

Solution:

Factorization

13	169
13	13
	1

$= \sqrt{13 \times 13} = 169$

$= 13$

Division Method

		13
	1	169
+	1	1
	2	69
	3	69
		0

$= \frac{3}{29} = 13$

Ans: $= 13$

(iii) 484:

Solution:

Factorization

2	484
2	242
11	121
11	11
	1

$= 2 \times 2 \times 11 \times 11 = 484$

$= 2 \times 11 = 22$

Division Method

		22	
	2	484	
	2	4	
42		84	
	2	84	
44		0	$= 22$

Ans: $= 22$

(iv) 961:

Solution:

Factorization

31	961
31	31
	1

Division Method

	31
3	961
+ 3	9
61	61
1	61
62	0

$$= \sqrt{\frac{31 \times 31}{31 \times 1} = \frac{961}{31}}$$

Ans: = 13

(v) 4900:

Solution:

Factorization

7	4900
7	700
	7
10	100
	100
10	10

Division Method

	70
7	4900
+ 7	49
14	00
	00
	0

$$= \sqrt{\frac{7 \times 7 \times 10 \times 10}{7 \times 10} = \frac{4900}{70}}$$

Ans: = 70

(vi) 1089:

Solution:

Factorization

31	1089
31	31
	1

Division Method

	31
3	1089
+ 3	9
63	189
3	189
66	0

$$= \sqrt{\frac{31 \times 31}{31}} = \frac{1089}{31}$$

Ans: $= 31$

(vii) 1600:

Solution:

Factorization

2	1600
2	800
2	400
2	200
2	100
2	50
5	25
5	5
	1

Division Method

	40
4	1600
+ 4	1600
8	00
	00
	0

$$= \sqrt{\frac{2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 5 \times 5}{2 \times 2 \times 2 \times 5}} = \frac{1600}{40}$$

Ans: $= 31$

(viii)2304:

Solution:

Factorization	
2	2304
2	1152
2	576
2	288
2	144
2	72
5	36
2	18
3	9
3	3
	1

Division Method

	48
4	2304
+ 4	16
88	704
88	704
96	0

$$= \sqrt{\frac{2\times2\times2\times2\times2\times2\times2\times2\times3\times3}{2\times2\times2\times2\times3}} = \frac{2304}{48}$$

Ans: $= 48$

(ix) 3136:

Solution:

Factorization	
2	3136
2	1568
2	7891
2	392
2	196
2	98
7	49
7	7
	1

Division Method

	56
5	3136
+ 5	25
106	636
6	636
112	0

$$= \sqrt{\frac{2\times2\times2\times2\times2\times2\times7\times7}{2\times2\times2\times7}} = \frac{3136}{56}$$

Ans: $= 56$

(x) 1681:

Solution:

Factorization

41	3136
41	1568
	0

Division Method

	41
4	1681
+ 4	16
81	81
1	81
82	0

$$= \sqrt{\frac{41 \times 41}{41}} = 1681$$

Ans: $= 41$

(xi) 1369:

Solution:

Factorization

37	1369
37	37
	1

Division Method

	37
3	1369
+3	9
67	469
7	469
74	0

$$= \sqrt{37 \times 37} = 1369$$

Ans: $= 37$

(xii) 2025:

Solution:

Factorization

3	2025
3	675
3	225
3	75
5	25
	5

Division Method

	45
4	2025
+ 4	16
85	425
5	425
90	0

$$= \sqrt{\frac{3 \times 3 \times 3 \times 3 \times 5 \times 5}{3 \times 3 \times 5}} = 2025$$

Ans: $= 45$

C. Find the square root of the following fraction by factorization and division method.

(i) $\frac{144}{225}$:

Solution:

Factorization

2	144
2	72
2	36
2	18
3	19
3	3
	1

$$\sqrt{\frac{2\times2\times2\times2\times3\times3}{2\times2\times3}} = \frac{144}{12}$$

3	225
3	75
5	25
5	5
	1

$$\sqrt{3\times3\times5} = 225$$

$$= \frac{12}{15} = \frac{12}{15}$$

Ans: $= \frac{4}{5}$

Division Method

	12
1	144
+ 1	1
2	44
+ 2	44
4	0

	15
1	225
+ 1	1
25	125
+ 5	5
30	0

$$= \frac{12}{15}$$

(ii) $\frac{324}{441}$:

Solution:

Factorization

2	324
2	162
2	81
2	27
3	9
3	3
	1

$$\sqrt{\frac{2\times2\times3\times3\times3\times3}{2\times3\times3}} = \frac{324}{18}$$

Division Method

	18
1	324
+1	1
28	224
+8	224
36	0

$$= \frac{18}{21}$$

3	441
3	147
7	49
7	7
	1

	21
2	441
+2	4
41	41
+1	41
42	0

$$= \frac{18}{21} = \frac{18}{21}\ \frac{6}{7} = \frac{6}{7}$$

$$= \sqrt{\frac{3\times3\times7}{3\times7}} = \frac{414}{21}$$

Ans: $= \frac{6}{7}$

(iii) $\frac{1225}{9801}$:

Solution:

Factorization

5	1225
5	245
7	49
7	7
	1

$$\sqrt{\frac{5\times5\times7\times7}{5\times7}} = \frac{1225}{35}$$

3	9801
3	3267
3	189
3	33
	11

Division Method

	35
31	1225
+31	9
65	325
+ 5	325
70	0

$$= \frac{35}{99}$$

	99
9	9801
+ 9	81
189	1701
+ 1	1701
198	0

$$= \frac{35}{99}$$

$$= \sqrt{\frac{3\times3\times3\times3\times11}{3\times3\times11}} = \frac{9801}{99} = \frac{35}{99}$$

Ans: $= \frac{35}{99}$

(iv) $1\frac{25}{144}$:

Solution:

$$= \frac{169}{144}$$

Factorization

13	169
13	13
7	13
	1

$$= \sqrt{13 \times 13} = 169$$

$$= 13$$

2	144
2	72
2	36
2	18
3	9
3	3
	1

Division Method

	13
1	169
+ 1	1
23	69
+ 3	69
29	0

$= 13$

	12
1	144
+ 1	1
22	44
+ 2	44
24	0

$= 12$

$$12\overline{)13}\ 1$$

$$\frac{12}{1}$$

$$= \sqrt{\frac{2 \times 2 \times 2 \times 2 \times 3 \times 3}{2 \times 2 \times 3}} = \frac{144}{12} = \frac{13}{12}$$

Ans: $= \frac{13}{12} = 1\frac{1}{12}$

(v) $1\frac{48}{121}$:

Solution:

$$= \frac{169}{121}$$

Factorization

13	169
13	13
	1

$$= \sqrt{13 \times 13} = 169$$

$$= 13$$

11	121
11	11
	1

Division Method

	13
1	169
+1	1
23	69
+3	69
29	0

$= 13$

	11
1	121
+1	1
21	21
+1	21
22	0

$$= = \frac{13}{11} = 1\frac{2}{11}$$

$$11\overline{)13}\ 1$$

$$\frac{11}{2}$$

Ans: $= 1\frac{2}{11}$

(viii) $\frac{1024}{1225}$:

Solution:

Factorization

5	1225
5	245
7	49
7	7
	1

$$= \sqrt{\frac{5\times5\times7\times7}{5\times7}} = \frac{1225}{35}$$

2	1024
2	512
2	256
2	128
2	64
2	32
2	16
2	8
2	4
2	2
	1

$$\sqrt{\frac{2\times2\times2\times2\times2\times2\times2\times2\times2\times2}{2\times2\times2\times2\times2}} = \frac{1024}{32}$$

Division Method

	32
3	1024
+ 3	9
62	124
+ 2	124
64	0

$= 32$

	35
3	1225
+ 3	9
65	425
+ 5	425
70	0

$= 35$

Ans: $= \frac{32}{35}$

(ix) $2\frac{217}{576}$:

Solution:

$$\frac{1369}{576}$$

Factorization

13	1369
13	13
	1

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

2	576
2	288
2	144
2	72
2	36
2	18
3	9
3	3
	1

$$\sqrt{\frac{2\times2\times2\times2\times2\times2\times3\times3}{2\times2\times2\times3}} = \frac{576}{24}$$

Division Method

	37
3	1369
+3	9
67	469
+7	469
74	0

$= 37$

	24
2	576
+2	4
44	176
+4	176
48	0

$= 24$

$$24\overline{)37}\ 1$$

$$\frac{24}{13} = 1\frac{13}{24}$$

Ans: $= 1\frac{13}{24}$

(x) $5\frac{55}{169}$:

Solution:

$$\frac{900}{169}$$

Factorization

3	900
3	300
10	100
	100
10	10
	1

$$= \sqrt{\frac{3\times3\times10\times10}{3\times10}} = \frac{900}{30}$$

13	169
13	13
	1

$$= \sqrt{\frac{13\times13}{3}} = \frac{169}{13}$$

$$13\overline{)30}\ 2$$

$$\frac{26}{4} = 2\frac{4}{13}$$

Ans: $= 2\frac{4}{13}$

Division Method

$$\begin{array}{r|l} & 3. \\ 3 & 900 \\ +3 & 9 \\ \hline & 00 \end{array}$$

$= 30$

$$\begin{array}{r|l} & 13 \\ 1 & 169 \\ +1 & 1 \\ \hline 23 & 69 \\ +3 & 69 \\ \hline 6 & 0 \end{array}$$

$$= \frac{30}{13}$$

(xi) $1\frac{63}{81}$:

Solution:

$$\frac{144}{81}$$

Factorization

2	144
2	72
2	36
2	18
3	9
3	3
	1

$$= \sqrt{\frac{2\times2\times2\times2\times3\times3}{2\times2\times3}} = \frac{144}{12}$$

3	81
3	27
3	9
3	3
	1

$$= \sqrt{\frac{3\times3\times3\times3}{3\times3}} = \frac{81}{9}$$

Division Method

$$\begin{array}{r|l} & 12 \\ \hline 1 & 144 \\ +1 & 1 \\ \hline 22 & 44 \\ +2 & 44 \\ \hline 4 & 0 \end{array}$$

$= 12$

$$\begin{array}{r|l} & 9 \\ \hline 9 & 81 \\ +9 & 81 \\ \hline 18 & 0 \end{array}$$

$= 9$

$= \frac{12}{9} 1\frac{3}{9}$

$$9\overline{)12}\ 1$$

$\frac{9}{3} = 1\frac{3}{9}$

Ans: $= 1\frac{3}{9}$

(xii) $3\frac{325}{900}$:

Solution:

Factorization

5	3025
5	65
11	11
1	11
	1

$$= \sqrt{\frac{5\times5\times11\times11}{5\times11}} = \frac{3025}{55}$$

3	900
3	300
3	100
3	10
	1

$$= \sqrt{\frac{3\times3\times10\times10}{3\times10}} = \frac{900}{30}$$

Division Method

	55
5	3025
+ 5	25
105	525
+ 5	525
10	0

$= 55$

	30
3	900
+ 3	9
60	00
+ 0	00
	0

$= \frac{55}{30}$

$$30\overline{)55}\ 1$$

$$\frac{30}{25} = \frac{55}{30}\ \ 1\frac{25}{30} = 1\frac{\cancel{25}^{5}}{\cancel{30}_{6}} = 1\frac{5}{6}$$

Ans: $= 1\frac{5}{6}$

D. Find the square root of the following by factorization and division.

(i) 3.24:

Solution:

	1.8
1	3.24
+1	1
28	2.24
+8	2.24
	0

$= \sqrt{3.24} = 1.8$

Ans: $= 1.8$

(ii) 4.41:

Solution:

	2.1
2	4.41
+2	4
41	41
+1	41
42	0

$= \sqrt{4.41} = 2.1$

Ans: $= 2.1$

(iii) 5.29:

Solution:

	2.3
2	5.29
+2	4
43	129
+3	129
6	0

$= \sqrt{5.29} = 2.3$

Ans: $= 2.3$

(iv) 7.29:

Solution:

	2.7
2	7.29
+2	4
47	329
+7	329
4	0

$= \sqrt{7.29} = 2.7$

Ans: $= 2.7$

(v) 6.25:

Solution:

	2.5
2	6.25
+ 2	4
45	225
+ 5	225
50	0

$= \sqrt{6.25} = 2.5$

Ans: = 2.5

(vi) 37.21:

Solution:

	6.1
6	37.21
+ 6	36
21	121
+ 1	121
	0

$= \sqrt{37.21} = 6.1$

Ans: = 6.1

(vii) 7.84:

Solution:

	2.8
2	7.84
+ 2	4
48	384
+ 8	384
56	0

$= \sqrt{7.84} = 2.8$

Ans: = 2.8

(viii) 10.24:

Solution:

	3.2
3	10.24
+ 3	9
62	124
+ 2	124
64	0

$= \sqrt{10.24} = 3.2$

Ans: = 3.2

(ix) 30.25:

Solution:

	5.5
5	30.25
+ 5	25
105	525
+ 5	525
110	0

$= \sqrt{30.25} = 5.5$

Ans: = 5.5

(x) 100.00:

Solution:

	10.0
10	100.00
+10	100
20	00
+ 0	00
	0

$= \sqrt{100.00} = 10.0$

Ans: = 10.0

(xi) 33.64:

Solution:

	5.8
5	33.64
+ 5	25
108	864
+ 8	864
116	0

$= \sqrt{33.64} = 5.8$

Ans: = 5.8

(xii) 34.81:

Solution:

	5.9
5	34.81
+ 5	25
109	981
+ 9	981
118	0

$= \sqrt{34.81} = 5.9$

Ans: = 5.9

EXERCISE 5.3

1. *784 chairs are arranged in an examination hall in such a way that the number of chairs in each row is the same as the number of rows. Find the number of rows. Also find the number of chairs in each row.*

Solution:

Total numbers of chairs = 784

	28
2	784
+ 2	4
48	384
8	384
56	0

$= \sqrt{784} = 28$

Ans: = 28 rows and 28 chairs

2. *The area of a square field is 240.25 square metres. Calculate the length of its side.*

Solution:

Area = 240.25

	15.5
1	240.25
+ 1	1
25	140
+ 5	125
305	1525
5	1525
310	0

$= \sqrt{240.25} = 15.5$

Ans: = 15.5 meters

3. *The length of a room is three times of its width and the area is 720.75 square are meters. Find its length and width.*

Solution:

room's area $= 720.75$

Three times of its width $= \frac{720.75}{3} = 240.25$

$$
\begin{array}{r|l}
 & 15.5 \\
\hline
1 & 240.25 \\
+1 & 1 \\
\hline
25 & 140 \\
5 & 125 \\
\hline
305 & 1525 \\
5 & 1525 \\
\hline
310 & 0
\end{array}
$$

$= \sqrt{240.25} = 15.5$

$= 15.5 \times 3 = 46.5$

Width $= 15.5$ meters

length $= 46.5$ meters

4. ***There are 2116 packets of biscuits packed in a carton. There are as many rows of biscuits as there are biscuits in each row. Find the number of rows of biscuits.***

Solution:

Total No. of packets = 2116

	46
4	2116
+ 4	16
86	516
6	516
92	0

$= \sqrt{2116} = 46$

Ans: = 46 rows

---

5. ***School function is to be attended by 1681 students. Find the number of chairs required for seating arrangement in such a way that equal number of students sit in a row as well as in column.***

Solution:

Total No. o fstudents = 1681

4	41
+ 4	1681
+ 4	16
81	81
+ 1	81
82	0

$= \sqrt{1681} = 41$

Ans: = 41 chairs

6. ***There are 625 trucks. All these trucks are standing in rows. There are as many ros as there are trucks in each row. Find the number of rows and the number of trucks in each row.***

Solution:

$= 625$

	25
2	625
+ 2	4
45	220
5	225
51	0

$= \sqrt{625} = 25$

Ans: $= 25$

7. A drill teacher arranged 1024 studends to stand in rows. There are as many rows as there are student is each. How many number of students in each row?

Solution:

No. of students = 1024

$$
\begin{array}{r|l}
 & 32 \\
\hline
3 & 1024 \\
+\ 3 & 9 \\
\hline
62 & 124 \\
2 & 124 \\
\hline
64 & 0
\end{array}
$$

$= \sqrt{1024} = 32$

$= 32$ rows.

Ans: = 32 Students

8. *The length of a rectangular field is thrice as its width. If the area of the field is 995.9052 square metres. Find its width and length.*

Solution:

$$\text{The length of field} = \frac{995.9052}{3}$$

Thrice its width = 331.9684

	18.22
1	331.9684
+ 1	1
28	231
8	224
362	796
2	796
3642	7284
2	7284
3644	0

$= \sqrt{331.9684} = 18.22$

$= 18.22 \times 3 = 54.66$

= width = 18.22 meters

Ans: = length = 54.66 meters

9. *Find the length of boundary of a square shaped school whose area is 3387.24 square meters.*

Solution:

Area of square shaped boundary = 3387.24 meter

		58.2
	5	3387.24
+	5	25
	108	887
+	8	864
	1162	2324
+	2	2324
	1164	0

$= \sqrt{3387.24} = 58.2$

Ans: = length = 58.2 metres

10. In a sugar factory 15.198 bags of sugar are to be arranged into the shape of a solid. But it is found that 69 bage are in excess. How many bags are arranged in arow?

Solution:

Total bag = 15.198

Excess bag = 69 = 15.198 − 69 = 15129

	123
1	15129
+ 1	1
22	51
+ 2	44
243	729
+ 3	720
246	0

$= \sqrt{15249} = 123$

Ans: = 123 bags are arrange din a row

REVIEW EXERCISE 5

1. *Give short answer of the following.*

(i) *What are the different ways to find the square root of a number.*

Ans: There are two ways to find the square root of a number.

(i) Factorization method.
(ii) Division method

(ii) *What is a perfect square number? Give examples.*

Ans: Perfect Square:

A positive number which is the square of any number is called "Perfect Square".

Example:

(i) $16 = 4 \times 4 = 4^2$
(ii) $0 = 3 \times 3 = 3^2$

(iii) *Describe any two properties of perfect square of a number. Give it examples/*

Ans: Properties of perfect square of number.

(i) The square of even number is even.

Example:

Even Number	Square	Perfect Square
2	$2^2 = 2 \times 2$	4
4	$4^2 = 4 \times 4$	16
6	$6^2 = 4 \times 4$	36
8	$8^2 = 8 \times 8$	64
10	$10^2 = 10 \times 10$	100

(ii) The square of an odd number is odd.

Example:

Odd Number	Square	Perfect Square
1	$1^2 = 1 \times 1$	1
3	$3^2 = 3 \times 3$	9
5	$5^2 = 5 \times 5$	25
7	$7^2 = 7 \times 7$	49
9	$9^2 = 9 \times 9$	81

2. Fill in the blanks.

(i) The square of 31 is 961 .
(ii) The square root of 49 is 7 .
(iii) 1, 4, 9, 16 are called perfect sqr. numbers.
(iv) 144 is the square of 12.
(v) $\sqrt{\frac{25}{36}} = \frac{5}{6}$. (iv) Square of 1 is 1 .

3. Write "T" for true and "F" for false.

(i) Primefactors of 235 are 2, 3 and 5. **(F)**
(ii) $192 = 361$ **(T)**
(iii) The square of an odd number is even **(F)**
(iv) $\frac{25}{49} > \frac{5}{7}$ **(F)**
(v) $(4.5)^2 > 4.5$ **(T)**
(vi) $.07 < (0.7)^2$ **(F)**

4. Choose the correct answer.

(i) If $p = q^2$ then q is called _____ of p.
(a) square root (b) square
(c) prime factor (d) radicand
Ans: (a) square root

(ii) The numbers whose squares are equal to their square root are _____ .
(a) 0 and 2 (b) 1 and 3
(c) 0 and 1 (d) 2 and 3
Ans: (c) 0 and 1

(iii) The perfect square number is _____ .
(a) 14 (b) 15 (c) 16 (d) 17
Ans: (c) 16