

I. Multiple choice questions:

1. 9 2. Cube root 3. 1:5000 4. $pq = k$ 5. n
6. Both a & c

II. Answer the following:

7. $169 = 1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19 + 21 + 23 + 25$

8. Let the number be 'x'

→ 33% of x = 9

→ $\frac{33}{100} \times x = 99$ $x = \frac{99 \times 100}{33}$ $x = 300$

Hence the no is 300.

9. a) $\overline{74088}$ Ans: 42
10. $144 - 1 = 143$ $143 - 3 = 140$ $140 - 5 = 135$
 $135 - 7 = 128$ $128 - 9 = 119$ $119 - 11 = 108$
 $108 - 13 = 95$ $95 - 15 = 80$ $80 - 17 = 63$
 $63 - 19 = 44$ $44 - 21 = 23$ $23 - 23 = 0$
∴ $\sqrt{144} = 12$

11. $64 = 13 + 15 + 17 + 19$

III. Answer the following:

12. $2m = 12$ $m^2 - 1 = 12$ $m^2 + 1 = 12$
 $m = \frac{12}{2}$ $m^2 = 12 + 1$ $m^2 + 12 - 1$
 $m = 6$ $m^2 = 13$ $m^2 = 11$
 $m = \sqrt{13}$ $m = \sqrt{11}$
not possible Not possible

Hence $2m = 2 \times 3 = 6$

$m^2 - 1 = 6^2 - 1 = 36 - 1 = 35$

$m^2 + 1 = 6^2 + 1 = 36 + 1 = 37$

∴ Hence Pythagorean triplet is (6, 35, 37)

13. $2 \overline{5832}$
 $2 \overline{2916}$
 $2 \overline{1458}$
 $3 \overline{729}$
 $3 \overline{243}$
 $3 \overline{81}$
 $3 \overline{27}$

$3 \overline{9}$
 $3 \overline{3}$
1

∴ $\sqrt[3]{5832} = 2 \times 3 \times 3$ $\sqrt[3]{5832} = 18$

14.

Distance covered in km	400	720
Time takes in hrs	5	?

Since it is a direct proportion.

$\frac{x_1}{y_1} = \frac{x_2}{y_2}$ ∴ $\frac{400}{5} = \frac{720}{y_2}$ $\frac{400^8}{5 \times 720_9} = \frac{1}{y_2}$

$\frac{1}{9} = \frac{1}{y_2}$ = $y_2 = 9$ Hence 9 hrs.

15.

$9 \overline{9216} 96$
81
186 $\overline{1116}$
 $\overline{1116}$
0

∴ $\sqrt{9216} = 96$

IV. Answer the following:

16. $2 \overline{1280}$
 $2 \overline{640}$
 $2 \overline{320}$
 $2 \overline{160}$
 $2 \overline{80}$
 $2 \overline{40}$
 $2 \overline{20}$
 $2 \overline{10}$
 $5 \overline{5}$
1

Here 5 has no pair so 5 has to be multiplied to get perfect square = $1280 \times 5 = 6400$

∴ $\sqrt{6400} = 80$

17.

No of workers	40	?
Time takes in hrs	15	8

It is an indirect proportion $x_1 y_1 = x_2 y_2$

$40 \times 15 = x_2 \times 8$ $\frac{40^5 \times 15}{8} = x_2$ $75 = x_2$

Hence No. of workers were 75.

18. Rough → 1m Fair diagram → 2m Steps → 1m