

VIII Test-10 (Squares and Square roots & Cubes and Cube roots)

- 1) A square field has an area of 144m^2 . The length of the side of the field is (a) 4m (b) 12m (c) 16m (d) 18m
- 2) Which of the following Pythagorean triplet has the smallest member '8' (a) $8, 11, 14$ (b) $8, 10, 12$ (c) $8, 9, 10$ (d) $8, 15, 17$
- 3) If $11x^3 = 8019$, then x is (a) 8 (b) 9 (c) 10 (d) 11 .
- 4) Find the least number that must be added to 2013 to make it a perfect square.
- 5) Find the value of $\sqrt[3]{\frac{-875}{189}}$
- 6) Find the Cube root of $0.000064 \times 1.728 \times 12167$
- 7) Simplify:-
 - (i) $\sqrt{400} + \sqrt{0.04} + \sqrt{0.000004}$
 - (ii) $\sqrt{212 \sqrt{154} + \sqrt{225}}$
- 8) Find the square root of 147.1369
- 9) What is the smallest number by which 3584 must be divided so that the quotient obtained is a perfect cube. Also, find the Cube root of the perfect cube so obtained.
- 10) Two buildings are 20m and 25m high. If the buildings are 12m apart, find the distance between their tops.
- 11) Three numbers are in the ratio $2:3:4$. The sum of their cubes is 33957 . Find the numbers.
- 12) Find the Cube of 3.1

VIII Test - 10 (Answers)

1) Area of a square field = Side \times Side = 144
 Side² = 144

\therefore length of each side = $\sqrt{144} = 12\text{m}$ (b)

2) We know that $(2m, m^2-1, m^2+1)$ forms a Pythagorean Triplet.

Let $2m = 8$

$m = \frac{8}{2} = 4$

Then, $m^2-1 = 4^2-1 = 16-1 = 15$

$m^2+1 = 4^2+1 = 16+1 = 17$

Thus the Pythagorean Triplet is $(8, 15, 17)$ (d)

3) $11x^3 = 8019$

$x^3 = \frac{8019}{11} = 729$

$x = \sqrt[3]{729} = 9$ (b)

4)

required
 \therefore The least number
 to be added
 = 12

4)	45
	2013
	16
85	413
	425
	12

5) $\sqrt[3]{\frac{-875}{27}}$

$= \frac{\sqrt[3]{-875}}{\sqrt[3]{27}} = \frac{-5}{3}$

6) $\sqrt[3]{0.000064} = 0.04$

$\sqrt[3]{1.728} = 1.2$

$\sqrt[3]{12167} = 23$

$\therefore \sqrt[3]{0.000064 \times 1.728 \times 12167}$
 $= 0.04 \times 1.2 \times 23 = \underline{\underline{1.104}}$

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11) let the three numbers be $2x$, $3x$ and $4x$.

$$(2x)^3 + (3x)^3 + (4x)^3 = 33957$$

$$\Rightarrow 8x^3 + 27x^3 + 64x^3 = 33957$$

$$\Rightarrow 99x^3 = 33957$$

$$\Rightarrow x^3 = \frac{33957}{99} = 343$$

$$\therefore x = \sqrt[3]{343}$$

$$x = 7$$

Thus the numbers are $2x = 14$

$$3x = 21$$

$$\text{and } 4x = 28$$

$$12) (3.1)^3 = 3.1 \times 3.1 \times 3.1$$

$$= 9.61 \times 3.1$$

$$= \underline{\underline{29.791}}$$

$$\begin{array}{r} 31 \\ \underline{31} \\ 93 \\ \underline{961} \\ 2883 \\ \underline{29791} \end{array}$$