

General Science & Ability Maths.

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CSS-2024 - Find the missing terms.

a. 121, 1181, 9, 49, 7

b. 100, 50, 25, 12.5, 6.25

c. 4, 9, 64, 125, 1296, 2401

d. 2, 5, 12, 24, 48, 96

e. 44, 22, 66, 33, 132, 66

Puzzles.

1. $2 + 7 = 27$

$4 + 4 = 24$

$5 + 9 = 42$

$6 + 0 = 18$

2.

2	6	18
4	20	100
6	21	147

3.

	2	
5		3
6	1	4
8	2	3 7

- CSS-2025 Question 8 Part d.

• How many prime numbers are there b/w following pairs of number?

a) $\sqrt{3}$ and $\sqrt{120}$

$$\sqrt{3} = \frac{3+4}{2\sqrt{4}} = \frac{7}{4} = 1.7$$

$$\sqrt{120} = \frac{120+121}{2\sqrt{121}} = \frac{242}{22} = 10.9$$

Prime nos b/w 1.7 & 10.9 = 2, 3, 5, 7 \Rightarrow (4)

b) $\sqrt[2]{10}$ and $\sqrt[2]{410}$

$$\sqrt[2]{10} = \frac{10+9}{2\sqrt{9}} = \frac{19}{6} = 3.1$$

$$\sqrt[2]{410} = \frac{410+400}{2\sqrt{400}} = \frac{810}{40} = 20.2$$

Prime nos b/w 3.1 and 20.2 = 5, 7, 11, 13, 17, 19 \Rightarrow (6)

c) $\sqrt[3]{10}$ and $\sqrt[3]{999}$

$$\sqrt[3]{10} = \sqrt[3]{8} + \frac{10-8}{3\sqrt[3]{8}^2} = 2 + \frac{2}{12} = \frac{13}{6} = 2.1$$

$$\sqrt[3]{999} = \sqrt[3]{1000} + \frac{999-1000}{3\sqrt[3]{1000}^2} = 10 - \frac{1}{300} = 10 - 0.03$$



$$\sqrt[3]{999} = 9.97$$

Prime nos b/w 2.1 and 9.97 = 3, 5, 7

Ans - (3) Prime nos.

d) $\sqrt[3]{28}$ and $\sqrt{120}$.

$$\sqrt[3]{28} = \sqrt[3]{27} + \frac{28-27}{2(\sqrt[3]{27})^2} = 3 + \frac{1}{18} = 3 + 0.05 = 3.05.$$

$$\sqrt{120} = \frac{120+121}{2\sqrt{121}} = \frac{242}{22} = 10.9$$

Prime nos b/w 3.05 and 10.9 = 5, 7 \Rightarrow (2)

e) $\sqrt[2]{8}$ and $\sqrt{400}$

$$\sqrt[2]{8} = \frac{8+9}{2\sqrt{9}} = \frac{17}{6} = 2.8$$

$$\sqrt{400} = 20.$$

Prime nos b/w 2.8 and 20 = 3, 5, 7, 11, 13, 17, 19

Ans - (7) Prime nos.



Find Missing terms.

1. 2, 3, 6, 4, 5, 20, 6, 3, 18

2. 1, 3, 9, 15, 25, 27, 49

3. 2, 7, 10, 22, 18, 37, 26, 52

4. 34, 7, 37, 14, 40, 28, 43, 56

5. 5, 7, 11, 13, 17, 19

6. 2, 4, 12, 48, 240

7. 5, 10, 13, 26, 29, 58, 61, 122

8. 15, 19, 28, 44, 69, 105

9. B, E, K, W, U

10. $\{(476 + 424)^2 - 4 \times 476 \times 424\} =$

2704