

5-June-2025

Thursday

Number Series:- CGS 2024:

a $121, 11, 81, 9, \underline{49}, 7$

$$\begin{array}{cccc} 11^2 & & 9^2 & 7^2 \end{array}$$

b $100, 50, 25, \underline{12.5}, 6.25$

c $4, 9, 64, 125, 1296, \underline{2401}$

d $2, 5, 12, 24, 48, \underline{96}$

e $44, 22, 66, 33, 132, \underline{66}$

Solve the Number Puzzle?

$$\begin{array}{ccc} 2 & \times^3 & 6 \\ & & \times^3 \\ & & 18 \end{array}$$

$$\begin{array}{ccc} 4 & \times^5 & 20 \\ & & \times^5 \\ & & 100 \end{array}$$

$$\begin{array}{ccc} 3 & \times^7 & 21 & \times^7 \\ & & & & 147 \end{array}$$

$$\begin{array}{r}
 2 \\
 5 - 3 \\
 6 - 1 - \underline{4} \\
 8 - 2 - 3 - 7
 \end{array}$$

$$2 + 7^{9 \times 3} = 27$$

$$4 + 4^{8 \times 3} = 24$$

$$5 + 9^{14 \times 3} = 42$$

$$6 + 0^{6 \times 3} = \underline{18}$$

Q1.

Find the missing terms

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

2 1, 3, 9, 15, 25 35 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

Find the Missing term:-

1 $2, 4, 12, 48, \underline{240}?$

2 $5, 10, 13, 26, 29, 58, 61, \underline{122}?$

3 $15, 19, 28, \underline{44}, \underline{69}, 105$

4 B, E, K, W _____?

5 $\{(476 + 424)^2 - 4 \times 476 \times 424\} = \underline{807266}$

d How many prime numbers are between each of the following pairs of numbers?

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

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

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

d $\sqrt[3]{28}$ and $\sqrt[3]{-20}$

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

$$a \quad \sqrt{3}, \quad \sqrt{120}$$

Formula $\frac{x+y}{2\sqrt{y}}$

let $x=3$ and $y=4$, let $x=120$ and $y=100$

$$\frac{3+4}{2\sqrt{4}}, \quad \frac{120+100}{2\sqrt{100}}$$

$$\frac{7}{2\sqrt{2}}, \quad \frac{220}{2\sqrt{100}}$$

$$\frac{7}{4}, \quad \frac{220}{20}$$

$$1.75, \quad 11$$

Prime numbers are: $\{2, 3, 5, 7\}$

$$\begin{array}{r} 1.75 \\ 4 \sqrt{7} \\ \hline 7 \\ \hline 30 \\ 28 \\ \hline 20 \\ 20 \\ \hline 0 \end{array}$$

$$b \quad 2\sqrt{10} \text{ and } 2\sqrt{410}$$

Formula : $\frac{x+y}{2\sqrt{y}}$

let $x=10$ and $y=9$, let $x=410$ and $y=400$

$$\frac{x+y}{2\sqrt{y}}, \quad \frac{410+400}{2\sqrt{400}}$$

$$\frac{10+9}{2\sqrt{9}}, \quad \frac{410+400}{2\sqrt{400}}$$

$$\frac{19}{2\sqrt{3}}, \quad \frac{810}{2\sqrt{20}}$$

$$\frac{19}{6}, \quad \frac{810}{40}$$

$$\frac{19}{6}, \quad \frac{81}{4}$$

$$\begin{array}{r} 20.25 \\ 4 \sqrt{81} \\ \hline 81 \\ 80 \\ \hline 10 \\ 8 \\ \hline 20 \\ 20 \\ \hline 0 \end{array}$$

3.166 , 20.25
 Prime numbers are : { 5, 7, 11, 13, 17, 19 }

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

$$\text{Formula : } \frac{3\sqrt[3]{q} + P - q}{3(3\sqrt[3]{q})^2}$$

let $p=10$ and $q=8$, let $p=999$ and $q=1000$

$$\frac{3\sqrt[3]{8} + 10 - 8}{3(3\sqrt[3]{8})^2}, \frac{3\sqrt[3]{1000} + 999 - 1000}{3(3\sqrt[3]{1000})^2}$$

$$\frac{3\sqrt[3]{2^3} + 2}{3(3\sqrt[3]{2^3})^2}, \frac{3\sqrt[3]{10^3} + (-1)}{3(3\sqrt[3]{10^3})^2}$$

$$\frac{2 + 2}{3(4)}, \frac{10 + (-1)}{3(100)}$$

$$\frac{2 + 2}{12}, \frac{10 + (-1)}{300}$$

$$\frac{24 + 2}{12}, \frac{3000 - 1}{300}$$

$$\frac{13 \overline{)26}}{6 \overline{)12}}, \frac{2999}{300}$$

$$\frac{13}{6}, \frac{2999}{300}$$

$$20.16, 9.99$$

Prime numbers are : { 3, 5, 7 }

$$d \quad 3\sqrt{28} \quad \text{and} \quad \sqrt{120}$$

$$\text{Formula: } \frac{3\sqrt{q} + P-q}{3(3\sqrt{q})^2}, \quad \frac{x+y}{2\sqrt{y}}$$

$$\text{Let } p=28 \text{ and } q=27, \quad \text{let } x=120 \text{ and } y=100$$

$$\frac{3\sqrt{27} + 28-27}{3(3\sqrt{27})^2}, \quad \frac{3\sqrt{27} + 120+100}{3(3\sqrt{100})^2}$$

$$\frac{3\sqrt{3^3} + 1}{3(3\sqrt{3^3})^2}, \quad \frac{220}{27\sqrt{100}}$$

$$\frac{3 + 1}{3(9)}, \quad \frac{220}{27\sqrt{100}}$$

$$\frac{3 + 1}{27}, \quad \frac{22}{27}$$

$$\frac{81 + 1}{27}, \quad \frac{11}{1}$$

$$\frac{82}{27}, \quad 11$$

$$3.03, \quad 11$$

Prime numbers are: $\{5, 7\}$

$$e \quad 2\sqrt{8} \quad \text{and} \quad \sqrt{400}$$

Formula applying on left side

$$\frac{x+y}{2\sqrt{y}}$$

let $x=8$ and $y=9$, $\sqrt{400}$

$$\frac{x+y}{2\sqrt{y}}, \sqrt{20^2}$$

$$\frac{8+9}{2\sqrt{9}}, \sqrt{20^2}$$

$$\frac{17}{2\sqrt{3^2}}, 20$$

$$\frac{17}{6}, 20$$

$$2.83, 20$$

Prime numbers are $\{3, 5, 7, 11, 13, 17, 19\}$

You have got potential
Good luck!

Add headings like given, asked,
solution, formula, answer
Also add explanations for series
questions