



DELHI POLICE 2025
CONSTABLE HCM AWO/TPO DRIVER

यकीन बैच

MATHS



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Ratio and Proportion
(अनुपात और समानुपात)



LIVE
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Ratio & Proportion :-

अनुपात एवं समानुपात

$$\frac{a}{b}$$

$$a:b::c:d$$

(i) Duplicate Ratio :: $\left(\frac{a}{b}\right)^2 = \frac{a^2}{b^2}$ Ex $\left(\frac{2}{3}\right)^2 = \frac{4}{9}$
वर्गानुपात

(ii) Subduplicate Ratio :: $\frac{a}{b} = \sqrt{\frac{a}{b}}$ Ex $\sqrt{\frac{16}{25}} = \frac{4}{5}$
वर्गमूलानुपात

(iii) Triplicate Ratio :: $\frac{a}{b} = \frac{a^3}{b^3}$ Ex $\frac{2}{3} = \left(\frac{2}{3}\right)^3 = \frac{8}{27}$
घनानुपात

Subtriplicate Ratio
घनमूलानुपात

$$\Rightarrow \sqrt[3]{\frac{64}{125}} = \left(\frac{4}{5}\right)$$

Componendo & dividendo

C&D Rule

योगान्तरानुपातः

$$(x+y) - x+y$$

$$\frac{x}{y} = \frac{4}{5}$$

$$\boxed{\frac{x+y}{x-y} = \frac{9}{1}}$$

Ex: यदि $\frac{x+y}{x-y} = \frac{15}{7}$ तो $\frac{x}{y} = ?$

$$\frac{x}{y} = \frac{11}{4}$$

यदि $\frac{a+b}{a-b} = \frac{5}{4}$
तो $\frac{a^2}{b^2} = ?$

$$\frac{a^2}{b^2} = \left(\frac{9}{1}\right)^2 = \left(\frac{81}{1}\right)$$

#1

$$\frac{a}{b} = \frac{2}{3} \quad \frac{b}{c} = \frac{4}{5}$$

a:b:c

$$\begin{array}{ccc} a & b & c \\ \left(\begin{array}{c} 2 \\ 4 \end{array} \right) & \left(\begin{array}{c} 3 \\ 4 \end{array} \right) & \left(\begin{array}{c} 3 \\ 5 \end{array} \right) \\ \hline 8 & : & 12 & : & 15 \end{array}$$

$$\Rightarrow a:b=1:2, b:c=2:3 \quad c:d=3:5$$

a:b:c:d

$$\begin{array}{cccc} a & b & c & d \\ \left(\begin{array}{c} 1 \\ 2 \\ 3 \end{array} \right) & \left(\begin{array}{c} 2 \\ 2 \\ 3 \end{array} \right) & \left(\begin{array}{c} 2 \\ 3 \\ 3 \end{array} \right) & \left(\begin{array}{c} 2 \\ 3 \\ 5 \end{array} \right) \\ \hline 1 & 2 & 3 & 5 \end{array}$$

$$\# a:b=1:4 \quad b:c=2:3 \quad d:c=1:2$$

$$a:b:c:d$$

a	b	c	d
$\begin{cases} 1 \\ 2 \\ 2 \end{cases}$	$\begin{cases} 4 \\ 2 \\ 2 \end{cases}$	$\begin{cases} 4 \\ 3 \\ 2 \end{cases}$	$\begin{cases} 4 \\ 3 \\ 1 \end{cases}$
$\cancel{4}$	$\cancel{16}$	$\cancel{24}$	$\cancel{12}$
1	4	6	3

$$a:b=1:5, b:c=2:3 \quad c:d=3:2$$

$$\boxed{a:d}$$

a	b	c	d
$\begin{matrix} 1 \\ 2 \\ 3 \end{matrix}$	$\begin{matrix} 5 \\ 2 \\ \cancel{3} \end{matrix}$	$\begin{matrix} 5 \\ 3 \\ \cancel{3} \end{matrix}$	$\begin{matrix} 5 \\ 3 \\ 2 \end{matrix}$
$b:c=2:3$			

$$1 \quad 5 \checkmark$$

2nd method

a	d
$\begin{matrix} 1 \\ 2 \\ 3 \end{matrix}$	$\begin{matrix} 5 \\ 3 \\ 2 \end{matrix}$
$1:5 \checkmark$	



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1. Which of the following represents the correct ratio?

निम्नलिखित में से क्या सही अनुपात को दर्शाता है?

~~(a)~~ $12:9 = 16:12$ ✓

~~(b)~~ $13:11 = 5:4$

~~(c)~~ $30:45 = 13:24$

~~(d)~~ $3:5 = 2:5$





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2. What is the ratio $25^{2.5} : 5^3$ equal to?

$25^{2.5} : 5^3$ का अनुपात किसके बराबर है।

$$\frac{25^{2.5}}{5^3} = \frac{(5^2)^{2.5}}{5^3}$$

सुनिश्चित करें

$= 5^5 : 5^3$

(a) 5:3

(b) 5:6

(c) 1:25

☒ (d) 25:1