



DELHI POLICE 2025
CONSTABLE HCM AWO/TPO DRIVER

यकीन बैच

MATHS



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Ratio and Proportion
(अनुपात और समानुपात)

Part-2

LIVE
STREAMING

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Concept 2:

$$\frac{A:B:C}{6:4:3}$$

$$\begin{array}{ccc} \downarrow & & \\ \cancel{2}A = \cancel{3}B = \cancel{4}C & & \\ \hline \frac{12}{6} & \frac{12}{4} & \frac{12}{3} \end{array}$$

2nd Method $2A = 3B = 4C$

$$A:B:C = \frac{12}{6} : \frac{12}{4} : \frac{12}{3}$$

$$\textcircled{11} \quad \frac{\cancel{2}A}{\cancel{60}} = \frac{\cancel{4}B}{\cancel{60}} = \frac{\cancel{5}C}{\cancel{60}}$$

$$3A = 4B = 5C$$

$$A:B:C = 20:15:12$$

$$\frac{A:B:C}{20:15:12}$$

Concept #3

$$\approx \frac{1}{3} : \frac{1}{4} : \frac{1}{5}$$

$$\frac{1 \times 60}{3} : \frac{1 \times 60}{4} : \frac{1 \times 60}{5}$$

$$\boxed{20 : 15 : 12}$$

$$\text{Ex } \frac{1}{2} : \frac{1}{3} : \frac{1}{4} : \frac{1}{5}$$

$$\frac{1 \times 60}{2} : \frac{1 \times 60}{3} : \frac{1 \times 60}{4} : \frac{1 \times 60}{5}$$

$$\boxed{30 : 20 : 15 : 12}$$

Concept #4

$$\frac{\cancel{2}A}{\cancel{3} \times \cancel{2}} = \frac{\cancel{3}B}{\cancel{5} \times \cancel{2}} = \frac{\cancel{4}C}{\cancel{7} \times \cancel{3}}$$

$$\boxed{A:B:C}$$
$$\underline{18:20:21}$$

$$\text{Eq: } \frac{\cancel{5}A}{\cancel{6} \times \cancel{7}} = \frac{\cancel{2}B}{\cancel{3} \times \cancel{7}} = \frac{\cancel{7}C}{\cancel{8} \times \cancel{7}}$$

$$A:B:C$$
$$\boxed{84:105:80}$$

#concept #5

$$A:B = \frac{1}{2} : \frac{3}{4}$$

$$= \frac{1 \times 4}{2 \times 3} = \frac{4}{6}$$

A	B	C
2	3	3
10	10	3
20	30	9

$$B:C = \frac{2}{3} : \frac{1}{5}$$

$$B:C = 10:3$$

$$A:B:C$$

2nd Eg. $A:B = \frac{1}{4} : \frac{2}{5}$, $B:C = \frac{8}{3} : \frac{9}{4}$, $C:D = \frac{5}{2} : \frac{6}{5}$

$$A:B:C:D$$

A	B	C	D
5	8	8	8
8	8	9	9
5	5	5	6
25	40	45	54

Concept #6 :

$$\frac{A}{B} = \cancel{B} \times \frac{2}{3}$$

$$\frac{B}{C} = \cancel{C} \times \frac{3}{5}$$

$$\frac{C}{D} = \cancel{D} \times \frac{1}{4}$$

$$A:B:C:D$$

A	B	C	D
$\frac{2}{\cancel{3}}$	$\frac{\cancel{3}}{\cancel{3}}$	$\frac{\cancel{3}}{5}$	$\frac{\cancel{3}}{5}$
1	1	1	4
62	93	155	620



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

$$\frac{5^5}{5^3} = 5^2$$

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

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

(a) 5:3

(b) 5:6

(c) 1:25

~~(d)~~ 25:1

(b)
(a)



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3. Which of the following ratio is the smallest?

निम्नलिखित में से कौन सा अनुपात सबसे छोटा है?

3 : 4, 1 : 2, 2 : 5, 1 : 3

(a) 1 : 3 $\frac{3}{4} = 0.750$

(b) 2 : 5

(c) 3 : 4 $\frac{1}{2} = 0.500$

(d) 1 : 2

$\frac{2}{5} = 0.400$

$\frac{1}{3} = 0.333$



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4. Which of the following ratios. is the largest?

निम्नलिखित में से कौन-सा अनुपात सबसे बड़ा है?

[DP Const., 21/11/2023, Shift-3]

- (a) $4 : 7 = 0.57$
(b) $5 : 8 = 0.62$
(c) $3 : 5 = 0.60$
(d) $1 : 3 = 0.33$



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0.71, 0.37
0.60, 0.44

5. Which of the following is the largest ratio?

निम्नलिखित में से सबसे बड़ा अनुपात कौन-सा है?

$\frac{5}{7}, \frac{3}{8}, \frac{9}{15}, \frac{4}{9}$

(a) $\frac{9}{15}$

(b) $\frac{5}{7}$

(c) $\frac{3}{8}$

(d) $\frac{4}{9}$



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6. If $a:b = 9:14$ and $b:c = 16:7$, then what is $a:b:c$?

यदि $a:b = 9:14$ और $b:c = 16:7$ है, तो $a:b:c$ क्या है

[DP Const., 28/11/2023, Shift-2]

72:36:18 9
 112:56:28 14

~~(a) 9:112:49~~

~~(b) 72:102:49~~

~~(c) 9:112:7~~

(d) 72:112:49

9 14

a b c

9 14 14

16 16 7

144 224 98

72 112 49

7. If $A : B = 3 : 4$ and $B : C = 6 : 7$, then find $A : B : C$.

यदि $A : B = 3 : 4$ तथा $B : C = 6 : 7$ है, तब $A : B : C$ ज्ञात कीजिए।

~~(a) $3 : 4 : 7$~~
~~(b) $12 : 16 : 21$~~
~~(c) $9 : 12 : 14$~~
~~(d) $9 : 12 : 7$~~

A	B	C
3	4	4
6	6	7
18	24	28
9	12	14



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8. If $A : B = 6 : 8$ and $B : C = 5 : 10$, then find $A : B : C$.

यदि $A : B = \frac{3}{6} : \frac{4}{8}$ तथा $B : C = \frac{1}{5} : \frac{2}{10}$ है, तब $A : B : C$

ज्ञात कीजिए।

(a) $1 : 3 : 4$

(b) $1 : 2 : 4$

(c) $4 : 3 : 2$

☒ (d) $3 : 4 : 8$

A	B	C
3	4	4
1	1	2
3	4	8



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9. If $a : b = 2 : 3$ and $b : c = 7 : 8$, then what is $a : c$?

यदि $a : b = 2 : 3$ और $b : c = 7 : 8$, तो $a : c$ क्या है?

$$\begin{array}{r} a \\ 2 \\ \hline 7 \\ 14 \\ 7 \end{array} \quad \begin{array}{r} c \\ 3 \\ \hline 8 \\ 24 \\ 12 \end{array}$$

- (a) 7 : 2
- (b) 4 : 7
- (c) 12 : 7
- ☒ (d) 7 : 12

$$\begin{array}{r} a \\ 2 \\ \hline 7 \\ 14 \\ 7 \end{array} \quad \begin{array}{r} \cancel{b} \\ \cancel{3} \\ \hline \cancel{7} \\ \cancel{14} \end{array} \quad \begin{array}{r} c \\ 3 \\ \hline 8 \\ 24 \\ 12 \end{array}$$



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10. If $p : q = 5 : 6$ and $r : q = 25 : 9$, then what is $p : r$?

यदि $p : q = 5 : 6$ और $r : q = 25 : 9$, तो $p : r$ क्या है?

(a) $10 : 13$

(b) $10 : 3$

☒ (c) $3 : 10$

(d) $13 : 10$

$$p : q = 5 : 6, q : r = 9 : 25$$

$$\begin{array}{l} p : r \\ \frac{5}{3} : \frac{25}{9} \\ 3 : 10 \end{array}$$



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How

11. If $a : b = 2 : 3$ and $a : c = 10 : 21$, then what is $b : c$?

यदि $a : b = 2 : 3$ और $a : c = 10 : 21$, तो $b : c$ क्या है?

- (a) $5 : 7$
- (b) $15 : 14$
- (c) $14 : 15$
- (d) $7 : 5$



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12. If $x:y = 2:3$, $y:z = 4:7$ and $z:w = 7:3$, then What is the value of $x:y:z:w$?

यदि $x:y = 2:3$, $y:z = 4:7$ और $z:w = 7:3$ है, तो $x:y:z:w$ का मान कितना है?

[DP Const., 30/11/2023, Shift-1]

$$\begin{array}{cccc}
 x & y & z & w \\
 \begin{array}{c} 2 \\ 4 \\ 7 \end{array} & \begin{array}{c} 3 \\ 4 \\ 7 \end{array} & \begin{array}{c} 3 \\ 7 \\ 7 \end{array} & \begin{array}{c} 3 \\ 7 \\ 3 \end{array} \\
 \hline
 8 & 12 & 21 & 9
 \end{array}$$

- ~~(a) 12:8:21:9~~
~~(b) 8:12:21:9~~ ✓✓
~~(c) 8:4:21:9~~
~~(d) 4:21:9:8~~



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13. If $A : B = 2 : 3$, $B : C = 4 : 5$ and $C : D = 6 : 7$, then find the value of $A : B : C : D$

यदि $A : B = 2 : 3$, $B : C = 4 : 5$ और $C : D = 6 : 7$, तो $A : B : C : D$ का मान ज्ञात कीजिए

(a) $15 : 30 : 34 : 40$

(b) $24 : 30 : 16 : 35$

(c) $16 : 24 : 30 : 35$

(d) $15 : 34 : 40 : 25$

$\frac{15}{30} \times 2 = 1$
 $\frac{4}{20} \times 3 = 0.6$
 $\frac{6}{42} \times 5 = 0.714$
 $\frac{16}{32} \times 3 = 1.5$
 $\frac{24}{48} \times 5 = 2.5$



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HW

14. If $a : b = 3 : 4$, $b : c = 2 : 3$, and $c : d = 5 : 6$, then what is $a : b : c : d$?

यदि $a : b = 3 : 4$, $b : c = 2 : 3$, और $c : d = 5 : 6$ है, तो $a : b : c : d$ क्या होगा?

- (a) 10:20:30:36
- (b) 15:20:35:36
- (c) 15:20:30:36
- (d) 15:25:30:36



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15. If $a:b:c=4:7:9$ and $b:c:d = 28:36:21$, then what is $a:b:c:d$?

यदि $a:b:c = 4:7:9$ और $b:c:d = 28:36:21$ है, तो $a:b:c:d$ क्या होगा ?

~~(a)~~ $12:21:27:17$

~~(b)~~ $16:28:36:21$ ✓

~~(c)~~ $8:14:18:21$

~~(d)~~ $4:7:9:11$

a b c d
 4×4 7×4 9×4

28 36 21

16:28:36:21



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16. If $a : b = 3 : 5$, $b : c = 7 : 8$ and $c : d = 2 : 3$, then find the value of $2a : 3d$.

यदि $a : b = 3 : 5$, $b : c = 7 : 8$ और $c : d = 2 : 3$ हो, तो $2a : 3d$ का मान ज्ञात करें।

$\frac{2a}{3d}$

$\frac{147}{6030}$

(a) 7:15

(b) 7:20

(c) 1:2

☒ (d) 7:30

