



# MATHS SPECIAL



**PRE + MAINS**

**LIVE CLASS** (ONE TO ONE INTERACTION)

**REGISTRATION  
OPEN**

**BILINGUAL CONTENT**

## INCLUDES

- ☐ LIVE Classes
- ☐ Result Oriented Approach
- ☐ PDF Notes
- ☐ Conceptual Clarity

**1 YEAR VALIDITY**

## USEFUL FOR

- ☐ SSC EXAMS
- ☐ BANK EXAMS
- ☐ CSAT
- ☐ STATE GOVT. EXAMS

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**SACHIN BALIYAN SIR**



# MATHS SYLLABUS



## ARITHMETIC:

(SSC/BANK/CUET/CSAT/STATE GOVT)

Time and Work  
Pipe and Cistern

Percentage  
Profit Loss and Discount  
Compound Interest  
Simple Interest

Average  
Ratio and Proportion  
Based of Ages  
Partnership  
Mixture and Alligation

Time Speed And Distance  
Train  
Race  
Boat and Stream

## BANK:

Number Series  
Quadratic Equation  
Simplification  
Approximation

Data Interpretation

Mensuration

Permutation  
Combination  
Probability

## SSC:

Number System  
LCM + HCF

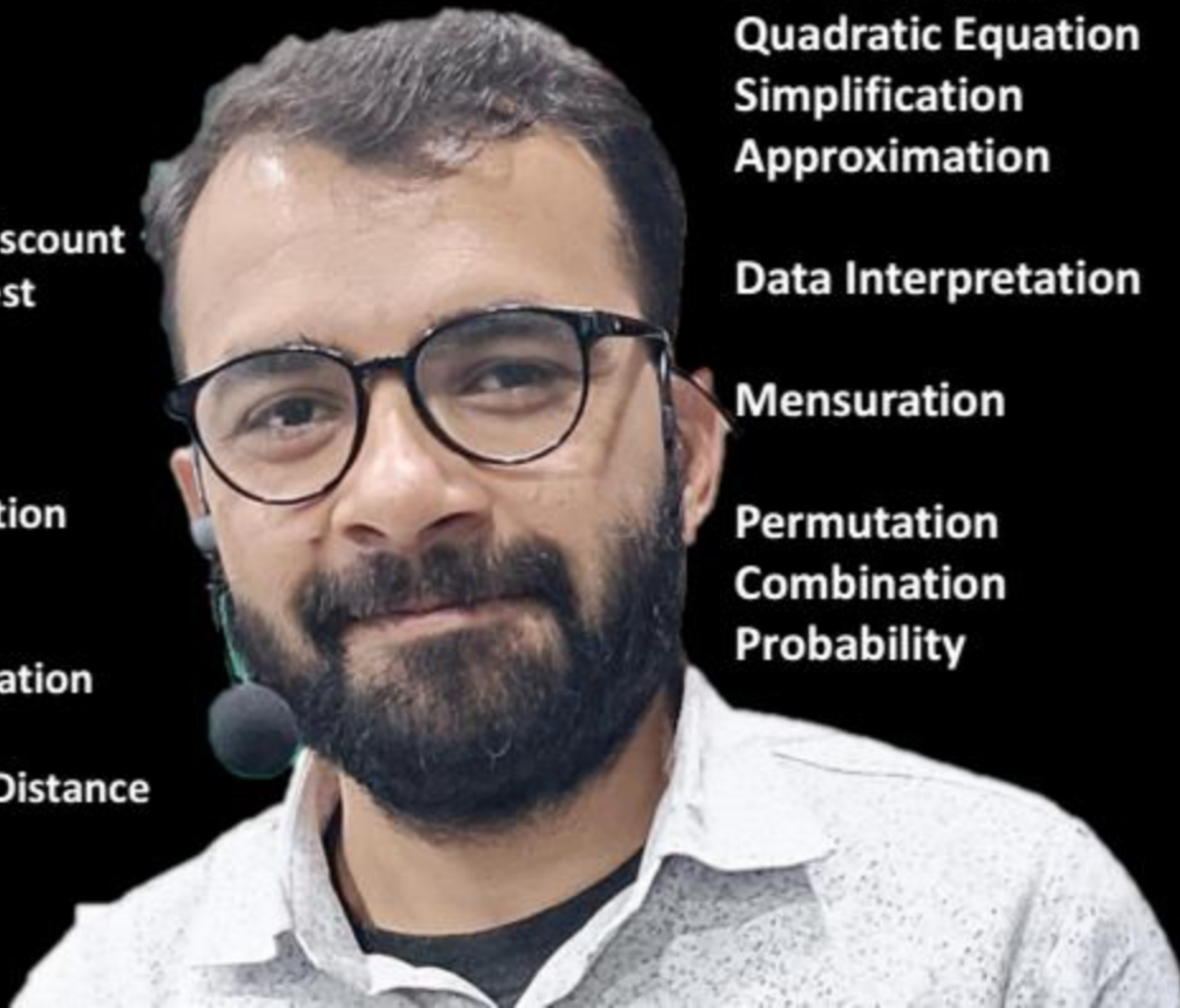
Surds  
Indices  
Algebra

Trigonometry  
Height and Distance

Geometry

Mensuration-2D  
Mensuration-3D

Co-ordinate Geometry



# Ratio & Proportion



# Basic Question

NO. OF QUESTIONS	CLASS NUMBER	CLASS DURATION
15 Questions	DAY - 2	1 HOURS

$$A : B = \frac{2}{3} : \frac{4}{5} \Rightarrow 10 : 12$$

Handwritten solution for the ratio A:B. The ratio is given as  $\frac{2}{3} : \frac{4}{5}$ . Red circles are drawn around the denominators 3 and 5. Red arrows point from these circles to the numerators 2 and 4 respectively, indicating cross-multiplication. The result is shown as  $10 : 12$ , with a red 'x' above the 10 and a red 'x7' above the 12.

$$B : C = \frac{1}{2} : \frac{5}{7} = 7 : 10$$

Handwritten solution for the ratio B:C. The ratio is given as  $\frac{1}{2} : \frac{5}{7}$ . Red circles are drawn around the denominators 2 and 7. Red arrows point from these circles to the numerators 1 and 5 respectively, indicating cross-multiplication. The result is shown as  $7 : 10$ , with a red 'x12' below the 7 and a red 'x12' to the right of the 10.

$$\frac{70}{35} : \frac{98}{49} : \frac{120}{60}$$

Handwritten solution for the combined ratio. The ratio is given as  $\frac{70}{35} : \frac{98}{49} : \frac{120}{60}$ . Red lines are drawn through the numerators and denominators, indicating simplification. The simplified ratio is shown as  $2 : 2 : 2$ .

Ans

If  $xy : yz : zx = 5 : 4 : 3$

Find  $x : y : z$  ?

(a)  $20 : 15 : 12$

(b)  $15 : 20 : 12$

(c)  $12 : 20 : 15$

(d)  $15 : 12 : 20$

$$\frac{xy}{yz} = \frac{5}{4}$$

$$\frac{x}{z} = \frac{5 \times 3}{4 \times 3}$$

$$\frac{yz}{zx} = \frac{4}{3}$$

$$\frac{y}{x} = \frac{4 \times 5}{3 \times 5}$$

$$\frac{x : y : z}{15 : 20 : 12}$$

Ans



If  $(x + y) : (y + z) : (z + x) = 6 : 5 : 3$ ,  
Find the ratio of  $x:y:z$  ?

(a)  $2 : 4 : 3$

(b)  $3 : 4 : 1$

(c)  $2 : 4 : 1$

(d)  $2 : 1 : 4$

$$2(x+y+z) = 14$$

$$x+y+z = 7$$

2 : 4 : 1

Ans

if  $a, b$  and  $c$  are sides of a triangle such that

$$a+b : b+c : c+a = 4 : 5 : 7$$

$$a : b : c = 3 : 1 : 4$$

if

$$a+b+c = 8$$
$$3+1+4 = 8$$





If  $(x - y + z) : (y - z + 2w) : (2x + z - w)$   
 $= 2 : 3 : 5,$

Find the ratio of  $(3x + 3z - 2w) : w = ?$

(a)  $2 : 4$

(b)  $7 : 1$

(c)  $4 : 1$

(d)  $2 : 1$

$$\frac{3(x + z) - 2w}{w} \Rightarrow \frac{7w}{w} = \boxed{7:1} \text{ Ans}$$

$$\begin{aligned} \cancel{x - y + z} + \cancel{y - z + 2w} &= 2x + 2 - w \\ \checkmark x + 2w &= 2x + 2 - w \\ \boxed{3w} &= \boxed{x + 2} \end{aligned}$$

#

$$A : B = 5 : 2$$

$$A = 5x$$
$$B = 2x$$

#

Addition:-

$$A + B = 5 + 2 = 7 \text{ unit}$$

OR

$$5x + 2x = 7x$$

#

Subtraction:-

$$A - B = 5 - 2 = 3 \text{ unit}$$

OR

$$5x - 2x = 3x$$

⊗ multiply :-

$$\begin{array}{r} \checkmark A : B \\ \hline \checkmark 5x : 2x \end{array}$$

$$A \cdot B = 5 \times 2 = \boxed{10 \text{ unit}}$$

$$1 \rightarrow 10$$

$$= 100$$

OR

$$5x \times 2x = \boxed{10x^2} = 100$$

$$\boxed{x = \sqrt{10}}$$



$$r : h = x : 2x$$

h

① Cylinder

$$Vol^n = \pi r^2 h$$

$$\pi \times 1^2 \times 2$$

$$2\pi$$

$$= \pi \times x^2 \times 2x$$

$$= 2\pi x^3$$



Ratio of age of father and his son is 5:2

. while product of their age is 1000

then what is the age of father? पिता

और उसके पुत्र की आयु का अनुपात 5: 2 है।

जबकि उनकी आयु का गुणनफल 1000 है तो

पिता की आयु क्या है?

500

50 ✓

25

None

$$F : S = 5x : 2x$$

$$5x \cdot 2x = 1000$$

$$10x^2 = 1000$$

$$x^2 = 100$$

$$x = \sqrt{100} = 10$$

$$5 \times 10$$



## Ratio-2 (Basic Question)

## MATHS WITH SACHIN BALIYAN SIR



If the length of a rectangle is 16.66% more than the width of the rectangle, whereas the area of that rectangle is 4200 square cm then what is the length of the rectangle?

यदि आयत की लंबाई आयत की चौड़ाई से 16.66% अधिक है। जबकि उस आयत का क्षेत्रफल 4200 वर्ग सेमी है तो आयत की लंबाई क्या है?

70

60

89

81

$$7x \cdot 6x = 4200$$

$$42x^2 = 4200$$

$$x^2 = 100$$

$$x = 10$$

$$16\frac{2}{3}\% \Rightarrow \frac{50}{3} \times \frac{1}{100} = \frac{1}{6}$$

$$\frac{1}{6}$$

$$l + \frac{1}{6}b$$

$$\frac{l : b}{7x : 6x}$$

$$\frac{x}{y}$$

Given

compare

$$60$$

$$70$$





If the Ratio of three numbers is 5:6:7. while their product is 5670 then what is the greatest number? तीन संख्याओं का अनुपात 5:6:7 है जबकि उनका गुणनफल 5670 है तो सबसे बड़ी संख्या क्या है?

H.O

27

21

89

81

Ankita has 108 bangles with her by mistake some bangles broken. What could not be possible ratio of broken to unbroken Bangles? अंकिता के पास 108 चूड़ियां हैं, गलती से कुछ चूड़ियां टूट गईं। टूटी हुई और बिना टूटा हुआ चूड़ियों का संभावित अनुपात क्या नहीं हो सकता है?

(a)  $5 : 4$ (b)  $5 : 1$ (c)  $7 : 5$ (d)  $11 : 7$ (e)  $11 : 9$ 

108

Broken : unbroken





The ratio of income of A, B & C are in the ratio 2 : 3 : 5 & their expenditures are in the ratio 1 : 3 : 4. Next year their income increases by 10%, 15% & 20% & their expenditure increases by 15%, 18% & 25% respectively. Find the original saving of B ? A, B और C की आय का अनुपात 2:3:5 के अनुपात में है और उनके व्यय का अनुपात 1:3:4 है। अगले वर्ष उनकी आय में 10%, 15% और 20% की वृद्धि होती है और उनके व्यय में क्रमशः 15%, 18% और 25% वृद्धि होती है। B की मूल बचत ज्ञात कीजिए?

(a) 3400

(b) 3660

(c) 3680

(d) 3170

(e) Cannot be determined





