

THE 5-SECOND HANDBOOK

Same
Concepts
Bigger
Results!

SSC CGL 2026 Quantitative Aptitude

Smarter
Faster
Stronger
for SSC!

- ✓ 50 Speed Tricks Mastered
- ✓ 300+ PYQs Solved with Zero-Pen Methods
- ✓ Formula-Free Elimination Across Arithmetic, Algebra, Geometry & Trigonometry
- ✓ 100% Exam-Tested on Latest TCS Pattern

Practice
Smart
Not
Hard!



Follow & Connect with Jhatpat Taiyari:



Instagram: @jhatpattaiyari



YouTube: Jhatpat Taiyari



Daily Quiz & Free PDF Updates:
Follow @jhatpattaiyari

Study
Share
Grow
Together!
😊

“ मेहनत इतनी खामोशी से करो कि सफलता शोर मचा दे! ”



Target SSC CGL 2026:
50/50 in Quantitative Aptitude!

Dream
Prepare
Crack!

TABLE OF CONTENTS

- ① **Chapter 1:**
Zero-Pen Elimination
(1 Trick – Trick #01)
- ② **Chapter 2:**
Speed Arithmetic
(17 Tricks – Tricks #02 to #18)
- ③ **Chapter 3:**
Speed Algebra
(10 Tricks – Tricks #19 to #28)
- ④ **Chapter 4:**
Time, Speed & Work
(7 Tricks – Tricks #29 to #35)
- ⑤ **Chapter 5:**
Geometry & Mensuration
(10 Tricks – Tricks #36 to #45)
- ⑥ **Chapter 6:**
Trigonometry
(5 Tricks – Tricks #46 to #50)
- ⑦ **Chapter 7:**
Last-48-Hours Memory Sheet
(Squares, Cubes, %-Fractions, Pythagorean Triplets)

CHAPTER 1: ZERO-PEN ELIMINATION

Trick #01: Chain Ratio Method

Less
Calculation
More
Selection!

Question - English:

If $A : B = 7 : 5$, $B : C = 2 : 3$, and $C : D = 4 : 5$, find the ratio $A : D$.

Question - Hindi:

यदि $A : B = 7 : 5$, $B : C = 2 : 3$, तथा $C : D = 4 : 5$ है, तो $A : D$ का अनुपात ज्ञात कीजिए।

Options:

A) 14 : 25

B) 28 : 25

✓ C) 56 : 75 (CORRECT ANSWER)

D) 75 : 56

Think
Smart
Eliminate
Fast!

⚡ 5-Second Solution & Elimination Method:

🔧 Technique: Chain Ratio Method

To find the compound ratio of endpoints ($A : D$), multiply all individual ratios:

$$A/D = (A/B) \times (B/C) \times (C/D)$$

$$A/D = \frac{7}{5} \times \frac{2}{3} \times \frac{4}{5}$$

Simplify the fraction:

$$A/D = \frac{7 \times 2 \times 4}{5 \times 3 \times 5}$$

$$A/D = \frac{56}{75}$$

Same
Concept
Bigger
Results!

Verification (Divisibility):

- Numerator must be a multiple of 7. 56 is divisible by 7 (✓).
- Denominator must be a multiple of 25. 75 is divisible by 25 (✓).



Answer: C) 56 : 75

➤ 17 Curated Speed Tricks
from SSC CGL PYQs ➤

CHAPTER 2: SPEED ARITHMETIC

Trick #02: Assumed Weighted Notebook Mixing

Topic: Profit & Loss

Question - English

61. A stationery shop owner buys three types of notebooks. The first type costs him 5 notebooks for ₹20, the second 2 notebooks for ₹9, and the third 10 notebooks for ₹45. He mixes them in the ratio 3 : 4 : 3. If he sells all the notebooks at 4 for ₹19, what is his approximate gain or loss percentage?

Question - Hindi

61. एक स्टेशनरी की दुकान का मालिक तीन प्रकार की नोटबुक खरीदता है। पहले प्रकार की 5 नोटबुक उसे ₹20 में मिलती हैं, दूसरे प्रकार की 2 नोटबुक ₹9 में और तीसरे प्रकार की 10 नोटबुक ₹45 में मिलती हैं। वह इन्हें 3 : 4 : 3 के अनुपात में मिलाता है। यदि वह सभी नोटबुक 4 नोटबुक ₹19 में बेचता है, तो उसका अनुमानित लाभ या हानि प्रतिशत क्या है?

Options:

- A) Loss of 9.2% C. Profit of 10%
☒ B) Profit of 9.2% (CORRECT ANSWER) D. Loss of 10%

Think
Smart
Calculate
Faster!

5-Second Solution & Elimination Method:

Answer: B. Profit of 9.2%

Solution!

Technique: Mixed Cost Price & Selling Price

Notebook types mixed in ratio 3 : 4 : 3.

Let notebook counts be 30, 40, 30 (Total = 100 notebooks).

Step 1: Calculate Cost Price (CP):

Type 1 (5 for 20 $\Rightarrow$ CP 4) = $30 \times 4 = ₹120$
 Type 2 (2 for 9 $\Rightarrow$ CP 4.5) = $40 \times 4.5 = ₹180$
 Type 3 (10 for 45 $\Rightarrow$ CP 4.5) = $30 \times 4.5 = ₹135$
 Total CP = $120 + 180 + 135 = ₹435$

Step 2: Calculate Selling Price (SP):

Sold at 4 for ₹19 (SP = 4.75)
 Total SP = $100 \times 4.75 = ₹475$

Step 3: Profit Percentage:

Profit = $475 - 435 = ₹40$
 Profit % = $(40/435) \times 100 = 9.195\% \approx 9.2\%$ Profit

Quick
Trick
High
Accuracy!

Trick #03: Base 100 Assumption (Percentage Chaining)

Question - English :

A book publisher offers a novel to a bookstore at a 30% discount on the cover price. However, they charge an additional 5% on the discounted price for shipping. The bookstore sells the novel for ₹1620 more, earning a profit of 40%. What was the original cover price of the novel?

Question - Hindi :

एक पुस्तक प्रकाशक एक पुस्तक की दुकान को कवर मूल्य पर 30% छूट पर एक उपन्यास बेचता है। हालांकि, वे शिपिंग के लिए छूट वाले मूल्य पर 5% अतिरिक्त शुल्क लेते हैं। पुस्तक की दुकान उपन्यास को ₹1620 अधिक में बेचती है, जिससे उसे 40% का लाभ होता है। उपन्यास का मूल कवर मूल्य क्या था?

Options :

- ☒ A) ₹5,510.20 (CORRECT ANSWER)
B) ₹19,254.62
C) ₹18,181.82
D) ₹20,654.67

Same
Concept
Bigger
Results!

⚡ 5-Second Solution & Elimination Method :

📌 Technique : Base 100 Assumption

Assume Original Cover Price (MP) = $100x$

Step 1: Calculate Bookstore's Cost Price (CP)

Discounted Price = $100x - 30\% = 70x$

Shipping added = $5\% \text{ of } 70x = 3.5x$

Total CP for bookstore = $70x + 3.5x = 73.5x$

Step 2: Calculate Profit

Profit = $40\% \text{ of CP}$

Profit = $40\% \text{ of } 73.5x = 0.4 \times 73.5x = 29.4x$

Step 3: Equate with actual profit

Given Profit = ₹1620

$29.4x = 1620$

$$x = \frac{1620}{29.4} = \frac{16200}{294} = \frac{2700}{49}$$

Step 4: Find Original Cover Price

$$MP = 100x = 100 \times \frac{2700}{49}$$

$$MP = \frac{270000}{49} \approx 5510.20$$

Think
Smart
Eliminate
Fast!

Practice
More
Score Higher!



Answer: A) ₹5,510.20

Trick #04: Ratio Equating Method

Question - English:

A container holds a mixture of three liquids A, B, and C in ratio 2 : 3 : 5. If 6 liters of liquid A, 12 liters of liquid B, and a certain amount of liquid C are added to the container, the new ratio of liquids A, B, and C becomes 3 : 5 : 8. Find the quantity (in liters) of liquid C added.

Question - Hindi:

एक कंटेनर में तीन तरल पदार्थ A, B और C का मिश्रण 2 : 3 : 5 के अनुपात में है। यदि कंटेनर में 6 लीटर तरल A, 12 लीटर तरल B और तरल C की एक निश्चित मात्रा डाली जाती है, तो तरल पदार्थ A, B और C का नया अनुपात 3 : 5 : 8 हो जाता है। मिलाए गए तरल C की मात्रा (लीटर में) ज्ञात कीजिए।

Options:

A) 15 liters

B) 16 liters

☒ 18 liters (CORRECT ANSWER)

D) 20 liters

Think
Smart
Calculate
Faster!

5-Second Solution & Elimination Method:

Technique: Ratio Equating Method

Initial Ratio $\rightarrow A : B : C = 2x : 3x : 5x$

Added Amounts $\rightarrow 6L \text{ of } A, 12L \text{ of } B, yL \text{ of } C$

Final Ratio $\rightarrow 3 : 5 : 8$

Equate the first two components (A and B) to find x:

$$\frac{2x+6}{3} = \frac{3x+12}{5}$$

Cross-multiply:

$$5(2x+6) = 3(3x+12)$$

$$10x+30 = 9x+36$$

$$x = 6$$

Now, the multiplier for the Final Ratio:

$$\text{Final A} = 2(6)+6 = 18.$$

$$\text{In the ratio } 3:5:8, 3 \text{ units} = 18 \therefore 1 \text{ unit} = 6$$

Calculate C:

$$\text{Final C} = 8 \text{ units} \times 6 = 48$$

$$\text{Initial C} = 5x = 5(6) = 30$$

$$\text{Added C (y)} = 48 - 30 = 18 \text{ liters}$$

Same
Concept
Bigger
Results!

 **Answer: C) 18 liters**

Trick #05: Time-Weighted Capital Ratio

Question - English:

55. Alok starts a business with ₹90,000. After 3 months, Deepak joins with ₹1,20,000. After 6 months from the beginning, Alok increases his investment by ₹30,000. Deepak leaves the business 3 months before the end of the year. What is their profit-sharing ratio?

Question - Hindi:

55. आलोक ₹90,000 के साथ एक व्यवसाय शुरू करता है। 3 माह बाद, दीपक ₹1,20,000 के साथ शामिल हो जाता है। प्रारंभ से 6 माह बाद, आलोक अपना निवेश ₹30,000 बढ़ा देता है। दीपक वर्ष समाप्त होने से 3 माह पहले व्यवसाय छोड़ देता है। उनका लाभ-साझाकरण अनुपात क्या है?

Options:

- ☒ A. 7:4 (CORRECT ANSWER)
B. 2:3
C. 5:4
D. 9:4

Same
Concept
Bigger
Results!

5-Second Solution & Elimination Method:

📌 Technique: Time-Weighted Capital Ratio

Alok's investment timeline:

First 6 months: ₹90,000

Next 6 months: ₹90,000 + ₹30,000 = ₹120,000

Alok's total equivalent capital = $(90k \times 6) + (120k \times 6)$
 $= 540k + 720k = 1,260,000$

Deepak's investment timeline:

Joins after 3 months, leaves 3 months before year-end.

Total active time = $12 - 3 - 3 = 6$ months

Deepak's total equivalent capital = $120k \times 6 = 720,000$

Profit Ratio (Alok : Deepak) = $1,260,000 : 720,000$
 $= 126 : 72$
 $= 7 : 4$ (Dividing by 18)

Think
Smart
Eliminate
Fast!

Practice
More
Score Higher!



Answer: A. 7:4

Trick #06: Average Deviation Method

Question - English :

The average weight of 12 people is 65 kg. If one person leaves and the new average becomes 64.5 kg, what is the weight of the person who left?

Question - Hindi :

12 व्यक्तियों का औसत वजन 65 किलोग्राम है। यदि एक व्यक्ति चला जाता है और नया औसत 64.5 किलोग्राम हो जाता है, तो चले गए व्यक्ति का वजन क्या है?

Options :

- ☒ A) 70.5 (CORRECT ANSWER)
B) 80.5
C) 90.5
D) 60.5



⚡ 5-Second Solution & Elimination Method

📖 Technique: Average Deviation Method

Instead of calculating total sums (12×65), use the deviation shortcut. When a person leaves and the average drops, they took away MORE than the average.

Weight of person left = Old Average + (Total Drop in Average)

Total Drop:

- New Average = 64.5 kg (Drop of 0.5 kg)
- Number of remaining people = 11
- Total drop spread across them = $11 \times 0.5 = 5.5$ kg

Calculation:

$$\text{Weight} = 65 + 5.5 = 70.5 \text{ kg}$$

Verification (Basic Math):

$$(12 \times 65) - (11 \times 64.5) = 780 - 709.5 = 70.5 (\checkmark)$$



Answer: A) 70.5

Trick #07: Base 100 Assumption

Question - English :

A sweet shop owner buys 10 boxes of sweets for the price of 8 boxes from a wholesaler. If he sells each box at a 2% discount on its marked price, what is his profit percentage?

Question - Hindi :

एक मिठाई की दुकान का मालिक एक थोक विक्रेता से 8 बॉक्स के मूल्य पर 10 बॉक्स मिठाई खरीदता है। यदि वह प्रत्येक बॉक्स को उसके अंकित मूल्य पर 2% छूट पर बेचता है, तो उसका लाभ प्रतिशत क्या है?

Options :

- A) 20%
- B) 24.36%
- ☒ C) 22.5% (CORRECT ANSWER)
- D) 25.86%

Same
Concept
Bigger
Results!

⚡ 5-Second Solution & Elimination Method :

📌 Technique : Base 100 Assumption

Step 1: Assume the Marked Price (MP) of 1 box = ₹100.

Step 2: Calculate Cost Price (CP):

He pays for 8 boxes but gets 10 boxes.

Total Cost = $8 \times 100 = ₹800$.

CP per box = $800 / 10 = ₹80$.

Step 3: Calculate Selling Price (SP):

He sells at a 2% discount on MP.

SP per box = $100 - 2\% \text{ of } 100 = ₹98$.

Step 4: Calculate Profit %:

Profit = $SP - CP = 98 - 80 = ₹18$

Profit % = $(\text{Profit} / \text{CP}) \times 100$

Profit % = $(18 / 80) \times 100$

Profit % = $(9 / 40) \times 100 = 90 / 4 = 22.5\%$

Think
Smart
Eliminate
Fast!

Practice
More
Score Higher!



Answer: C) 22.5%

Trick #08: Part-Removal Equation Variable

Topic: Ratio & Mixtures

Question - English:

67. A container holds a mixture of Orange, Apple, and Guava juices in the ratio of 5:7:4 respectively. 24 litres of this mixture is taken out, and then 10 litres of orange juice and 6 litres of guava juice are added to the vessel. If the resultant quantity of apple juice is 14 litres more than the resultant quantity of orange juice, what was the initial quantity of mixture in the vessel (in litres)?

Question - Hindi :

67. एक बर्तन में संतरे, सेब और अमरूद के जूस का मिश्रण क्रमशः 5:7:4 के अनुपात में है। इस मिश्रण का 24 लीटर निकाला जाता है, और फिर बर्तन में 10 लीटर संतरे का जूस और 6 लीटर अमरूद का जूस मिलाया जाता है। यदि सेब के जूस की परिणामी मात्रा संतरे के जूस की परिणामी मात्रा से 14 लीटर अधिक है, तो बर्तन में मिश्रण की प्रारंभिक मात्रा (लीटर में) क्या थी?

Options :

- ☒ A. 216 (CORRECT ANSWER)
B. 210
C. 214
D. 235

Quick
Trick
Remember!
! 😊

⚡ 5-Second Solution & Elimination Method :

 **Answer: A. 216**

Solution! 

Technique: Ratio Variable Balancing

Ratio Orange:Apple:Guava = 5:7:4 (Total parts = 16)

Let initial total quantity be $16x$.

Step 1: Fraction of juices taken out in 24L:

$$\text{Orange} = \left(\frac{5}{16}\right) \times 24 = 7.5\text{L}$$

$$\text{Apple} = \left(\frac{7}{16}\right) \times 24 = 10.5\text{L}$$

Step 2: Calculate resultant quantities:

$$\text{Orange} = 5x - 7.5 + 10 = 5x + 2.5$$

$$\text{Apple} = 7x - 10.5$$

Step 3: Solve for x (Apple = Orange + 14):

$$7x - 10.5 = 5x + 2.5 + 14$$

$$2x = 27 \Rightarrow x = 13.5$$

$$\text{Initial total quantity} = 16x = 16 \times 13.5 = 216\text{L}$$



Answer: A. 216

Trick #09: Rule of Alligation Averages

Topic: Averages, Alligation

Question - English :

56. The overall average salary for all employees in an office is ₹16,000. Officers earn an average salary of ₹28,000, while non-officers make an average of ₹10,000. If there are 15 officers, determine the number of non-officers.

Question - Hindi :

56. एक कार्यालय में सभी कर्मचारियों का कुल औसत वेतन ₹16,000 है। अधिकारी औसतन ₹28,000 अर्जित करते हैं, जबकि गैर-अधिकारी औसतन ₹10,000 अर्जित करते हैं। यदि 15 अधिकारी हैं, तो गैर-अधिकारियों की संख्या ज्ञात कीजिए।

Options :

- ☒ A. 30 (CORRECT ANSWER)
B. 40
C. 50
D. 60

Think
Smart
Eliminate
Fast!

⚡ 5-Second Solution & Elimination Method :

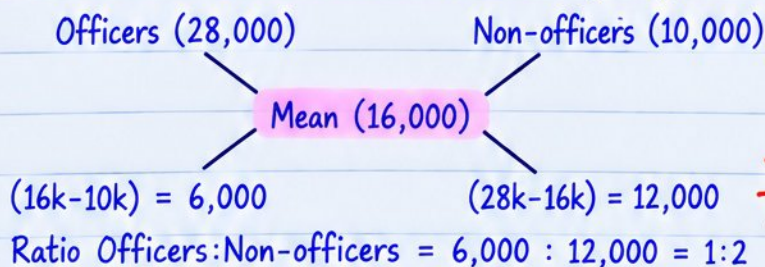


Answer: A. 30

Solution! 👉

📌 Technique: Rule of Alligation

Step 1: Find ratio of Officers to Non-officers using Alligation:



Step 2: Solve for Non-officers (Officers = 15):

$$\text{Non-officers} = 15 \times 2 = 30$$

Same
Concept
Bigger
Results!

Practice
More
Score Higher!

Trick #10: Assumed SP Profit Loss Scaling

Topic: Profit & Loss

Question - English:

62. A seller bought three different types of mobile covers, C1, C2, and C3. The ratio of their selling prices was 3:4:5. He made a profit of 25% on C1, 10% on C2, but incurred a loss of 20% on C3. What was his approximate percent gain or loss in the entire transaction?

Question - Hindi:

62. एक विक्रेता ने तीन अलग-अलग प्रकार के मोबाइल कवर, C1, C2 और C3 खरीदे। उनके विक्रय मूल्य का अनुपात 3:4:5 था। वह C1 पर 25% का लाभ, C2 पर 10% का लाभ अर्जित करता है, लेकिन C3 पर 20% की हानि होती है। पूरे लेन-देन में उसका अनुमानित लाभ या हानि प्रतिशत क्या था?

Options:

- A. profit of 2.33%
- ☒ B. loss of 2.33% (CORRECT ANSWER)
- C. loss of 4.62%
- D. profit of 4.62%

Quick
Trick
Remember!
! 😊

5-Second Solution & Elimination Method:



Answer: B. loss of 2.33%

Solution! 📌

Technique: Selling Price to Cost Price Conversion

Ratio of Selling Prices $C1:C2:C3 = 3:4:5$.

Let SPs be 30, 40, 50 (Total SP = ₹120).

Step 1: Calculate CP of each:

$$CP_1 \text{ (25\% profit)} = 30 / 1.25 = ₹24$$

$$CP_2 \text{ (10\% profit)} = 40 / 1.1 = ₹36.36$$

$$CP_3 \text{ (20\% loss)} = 50 / 0.8 = ₹62.5$$

$$\text{Total CP} = 24 + 36.36 + 62.5 = ₹122.86$$

Step 2: Profit/Loss Percentage:

$$\text{Loss} = 122.86 - 120 = ₹2.86$$

$$\text{Loss \%} = (2.86 / 122.86) \times 100 = 2.327\% \approx 2.33\% \text{ Loss}$$



Answer: B. loss of 2.33%

Same
Concept
Bigger
Results!
! 😊

Trick #11: Successive Replacement Formula

Question - English :

A cistern contains 100 liters of pure syrup. 10 liters of syrup are drawn out and replaced by water. Then, 10 liters of the mixture are drawn out and replaced by water again. What is the ratio of syrup to water in the final mixture?

Question - Hindi :

एक टंकी में 100 लीटर शुद्ध सिरप है। 10 लीटर सिरप निकाला जाता है और उसकी जगह पानी डाला जाता है। फिर, 10 लीटर मिश्रण निकाला जाता है और फिर से पानी से प्रतिस्थापित किया जाता है। अंतिम मिश्रण में सिरप और पानी का अनुपात क्या है?

Options :

- A) 18:1
- B) 89:14
- ☒ C) 81:19 (CORRECT ANSWER)
- D) 18:17

Think
Smart
Eliminate
Fast!

⚡ 5-Second Solution & Elimination Method :

🔧 Technique : Successive Replacement Formula

When a fraction ($f = \text{draw}/\text{total}$) is replaced 'n' times:

$$\text{Final} = \text{Initial} \times (1 - f)^n$$

Given :
Initial = 100 L
 $f = 10 / 100 = 1/10$
 $n = 2$ operations

Calculate Final Syrup:

$$\begin{aligned}\text{Syrup} &= 100 \times (1 - 1/10)^2 \\ \text{Syrup} &= 100 \times (9/10)^2 \\ \text{Syrup} &= 100 \times (81/100) = 81 \text{ L}\end{aligned}$$

Calculate Water:

$$\begin{aligned}\text{Water} &= \text{Total} - \text{Syrup} \\ \text{Water} &= 100 - 81 = 19 \text{ L}\end{aligned}$$

Find Ratio: Syrup : Water = 81 : 19



Answer: C) 81:19

Same
Concept
Bigger
Results!

Practice
More
Score Higher!

Trick #12: Partnership Ratio

Topic: Partnership

Question - English:

Gautam started a business with a sum of ₹ 60,000. Jatin joined him 8 months later with a sum of ₹ 35,000. At what respective ratio will the two share the profit after two years?

Question - Hindi:

गौतम ने ₹ 60,000 की राशि के साथ एक व्यवसाय शुरू किया है। जतिन 8 महीने बाद ₹ 35,000 की राशि के साथ उसके साथ जुड़ जाता है। दो वर्ष बाद दोनों किस अनुपात में लाभ साझा करेंगे?

Options:

- ☒ A) 18:7 (CORRECT ANSWER)
B) 15:7
C) 12:7
D) 5:7

Quick
Trick
Remember!
! 😊

⚡ 5-Second Solution & Elimination Method:

 Technique: Partnership Investment Ratio

Profit Ratio = (Investment × Time)

Time duration is 2 years = 24 months.

Gautam : Investment = 60,000, Time = 24 months

Jatin : Investment = 35,000, Time = 24 - 8 = 16 months

Ratio:

Gautam : Jatin
(60,000 × 24) : (35,000 × 16)

Simplify by cancelling common zeros (1000):

(60 × 24) : (35 × 16)

Divide both sides by 8:

(60 × 3) : (35 × 2)

180 : 70

Divide by 10:

18 : 7

Same
Concept
Bigger
Results!
😊



Answer: A) 18:7

Trick #13: Fractional Period Rate Adjustment

Topic: Compound Interest

Question - English:

59. Find the compound interest on ₹7,000 at 9% p.a. for 1 year 8 months, compounded annually.

Question - Hindi:

59. ₹7,000 पर 1 वर्ष 8 माह के लिए 9% प्रति वर्ष की दर से वार्षिक रूप से संयोजित चक्रवृद्धि ब्याज ज्ञात कीजिए।

Options:

- A. ₹2,087.80
- B. ₹1,000.80
- ☒ C. ₹1,087.80 (CORRECT ANSWER)
- D. ₹2,000.80

Think
Smart
Eliminate
Fast!

5-Second Solution & Elimination Method:

 Answer: C. ₹1,087.80

Solution! 

 Technique: Fractional Year Compound Interest

Principal = ₹7,000, Rate = 9% p.a., Time = 1 yr 8 months

Step 1: Interest rate for 8 months:

$$8 \text{ months} = 8/12 = 2/3 \text{ year}$$

$$\text{Rate for 8 months} = 9\% \times (2/3) = 6\%$$

Step 2: Calculate amount compounding annually:

$$\text{Amount at end of 1st year} = 7,000 \times 1.09 = ₹7,630$$

$$\text{Amount at end of 1 yr 8m} = 7,630 \times 1.06 = ₹8,087.80$$

Step 3: Compound Interest:

$$CI = 8,087.80 - 7,000 = ₹1,087.80$$

Same
Concept
Bigger
Results!

Practice
More
Score Higher!

Trick #14: Basic Ratio Setup

Topic: Ratio & Mixtures

Question - English:

23. Two numbers are in ratio 7:9, and their sum is 128.
Find the numbers.

Question - Hindi:

23. दो संख्याएँ 7:9 के अनुपात में हैं, और उनका योग 128 है।
संख्याएँ ज्ञात कीजिए।

Options:

- A. 49, 79
- ☒ B. 56, 72 (CORRECT ANSWER)
- C. 62, 66
- D. 70, 58

Quick
Trick
Remember!
! 😊

⚡ 5-Second Solution & Elimination Method:

Technique: Basic Ratio Setup

	Num 1	:	Num 2
Ratio →	7	:	9
Total →	16	units	

$$\therefore 16 \text{ units} = 128$$

$$\therefore 1 \text{ unit} = 8$$

$$\therefore \text{Numbers} = 7 \times 8, 9 \times 8 = 56, 72$$

Same
Concept
Bigger
Results!
😊



Answer: B. 56, 72

Trick #15: Basic Arithmetic

Question - English :

25. If the sum of 28 and 22 is multiplied by 8, what is the result?

Question - Hindi :

25. यदि 28 और 22 के योग को 8 से गुणा किया जाए तो परिणाम क्या होगा?

Options :

- A. 384
- ☒ B. 400 (CORRECT ANSWER)
- C. 415
- D. 416

Think
Smart
Eliminate
Fast!

5-Second Solution & Elimination Method :

 Technique : Basic Arithmetic

Sum $\rightarrow 28 + 22 = 50$

Action $\rightarrow$ Multiply by 8

Result $\rightarrow 50 \times 8 = 400$

Same
Concept
Bigger
Results!



Answer: B. 400

Trick #16: Variable Ratio Scaling

Topic: Ratio & Mixtures

Question - English:

52. The number of red, blue, and green marbles in a bag is in the ratio 3:4:6. If 20 red marbles, 15 blue marbles, and an unknown number of green marbles are added to the bag, the ratio of red, blue, and green marbles becomes 4:5:7. Determine the number of green marbles added.

Question - Hindi:

52. एक बैग में लाल, नीले और हरे कंचों की संख्या का अनुपात 3:4:6 है। यदि बैग में 20 लाल कंचे, 15 नीले कंचे और अज्ञात संख्या में हरे कंचे डाले जाएं तो लाल, नीले और हरे कंचों का अनुपात 4:5:7 हो जाता है। डाले गए हरे कंचों की संख्या ज्ञात कीजिए।

Options:

- A. 3
☒ B. 5 (CORRECT ANSWER)
C. 7
D. 9

Quick
Trick
Remember!
! 😊

⚡ 5-Second Solution & Elimination Method:

📖 Technique: Variable Ratio Scaling

Initial → 3k : 4k : 6k

Final → 4 : 5 : 7

Red → 3k + 20 = 4 units

Blue → 4k + 15 = 5 units

$$\therefore \frac{3k+20}{4} = \frac{4k+15}{5}$$

$$\therefore 15k + 100 = 16k + 60 \rightarrow k = 40$$

$$\text{Initial Green} = 6(40) = 240$$

$$1 \text{ unit} = \frac{3(40)+20}{4} = 35$$

$$\text{Final Green} = 7(35) = 245$$

$$\text{Added Green} = 245 - 240 = 5$$

Same
Concept
Bigger
Results!
😊



Answer: 5 green marbles

Trick #17: Partnership Profit Ratio

Question - English:

54. A and B invest ₹40,000 and ₹60,000 respectively in a business. What is A's share in a profit of ₹50,000?

Question - Hindi:

54. A और B एक व्यवसाय में क्रमशः ₹40,000 और ₹60,000 का निवेश करते हैं। ₹50,000 के लाभ में A का भाग क्या है?

Options:

- A. ₹15,000
- ☒ B. ₹20,000 (CORRECT ANSWER)
- C. ₹25,000
- D. ₹30,000

Think
Smart
Eliminate
Fast!

⚡ 5-Second Solution & Elimination Method:

📌 Technique: Partnership Profit Ratio

	A	:	B
Invest	→ 40k	:	60k
Ratio	→ 2	:	3
Total	→ 5 units		

$$\therefore 5 \text{ units} = 50,000$$

$$\therefore 1 \text{ unit} = 10,000$$

$$\therefore \text{A's share} = 2 \times 10,000 = 20,000$$

Same
Concept
Bigger
Results!



Answer: ₹20,000

Practice
More
Score Higher!

Trick #18: Weighted Partnership

Topic: Partnership

Question - English:

55. A and B contribute to a business investment in the ratio 3:5. They earn a profit of ₹64,000. A is a working partner and receives 10% of the profit extra. What is A's total share?

Question - Hindi:

55. A और B किसी व्यवसाय में 3:5 के अनुपात में निवेश करते हैं। वे ₹64,000 का लाभ अर्जित करते हैं। A एक कार्यकारी भागीदार है और उसे लाभ का 10% अतिरिक्त मिलता है। A का कुल भाग क्या है?

Options:

- A. ₹26,500
- ☒ B. ₹28,000 (CORRECT ANSWER)
- C. ₹38,500
- D. ₹36,000



⚡ 5-Second Solution & Elimination Method:

📁 Technique: Weighted Partnership

Total → 64,000

A Extra → 10% = 6,400

Remain → 57,600

Ratio → 3 : 5

Total → 8 units

∴ 8 units = 57,600

∴ 1 unit = 7,200

∴ A Total = $(3 \times 7,200) + 6,400 = 28,000$



Answer: ₹28,000

➤ 10 Curated Speed Tricks
from SSC CGL PYQs

CHAPTER 3: SPEED ALGEBRA

Trick #19: Fractional Approximation

Question - English :

Simplify: $(1.5 + \frac{3}{8})^3 - (\frac{9}{5} \times 1.25)$

Question - Hindi :

सरल करें: $(1.5 + \frac{3}{8})^3 - (\frac{9}{5} \times 1.25)$

Options :

- ☒ A) 4.3418 (CORRECT ANSWER)
B) 5.3418
C) 6.5526
D) 7.5526

Think
Smart
Eliminate
Fast!

⚡ 5-Second Solution & Elimination Method :

📌 Technique : Fractional Approximation

Convert decimals to fractions for structural clarity, but use approximation to avoid brutal calculations.

Term 1: $(1.5 + \frac{3}{8})^3$
 $= (1.5 + 0.375)^3 = (1.875)^3$

Term 2: $\frac{9}{5} \times 1.25$
 $= 1.8 \times 1.25 = 2.25$ (Exact)

Approximate Term 1:

$(1.875)^3$ is slightly less than $(1.9)^3$
 $1.9^3 = 6.859$
So, $(1.875)^3 \approx 6.6$

Subtract:

Result $\approx 6.6 - 2.25 = 4.35$

Check options:

A) 4.3418 is the only option in this exact range.

(Digital sum fails here because the given options are rounded approximations).



Answer: A) 4.3418

Same
Concept
Bigger
Results!

Practice
More
Score Higher!

Trick #20: Squaring & Approximation

Topic: Squaring & Approximation

Question - English:

51. Suppose $x = \sqrt{2} + \sqrt{3}$, $y = \sqrt{5} + \sqrt{1}$, and $z = 2\sqrt{2} + 1$. ;
then which of the following is true?

Question - Hindi:

51. मान लीजिए $x = \sqrt{2} + \sqrt{3}$, $y = \sqrt{5} + \sqrt{1}$, और $z = 2\sqrt{2} + 1$ है;
तो निम्न में कौन-सा सत्य है?

Options:

- ☒ A. $x < y < z$ (CORRECT ANSWER)
B. $z < y < x$
C. $y < x < z$
D. $x < z < y$



⚡ 5-Second Solution & Elimination Method:

Technique: Squaring & Approximation

Square each term to compare without radicals:

$$x^2 = (\sqrt{2} + \sqrt{3})^2 = 2 + 3 + 2\sqrt{6} = 5 + 2\sqrt{6} \approx 5 + 2(2.45) = 9.9$$

$$y^2 = (\sqrt{5} + \sqrt{1})^2 = 5 + 1 + 2\sqrt{5} = 6 + 2\sqrt{5} \approx 6 + 2(2.23) = 10.46$$

$$z^2 = (\sqrt{8} + 1)^2 = 8 + 1 + 2\sqrt{8} = 9 + 2\sqrt{8} \approx 9 + 2(2.82) = 14.64$$

Since $9.9 < 10.46 < 14.64$:

$$x^2 < y^2 < z^2$$



Answer: A. $x < y < z$



Trick #21: Equation & Substitution

Question - English :

57. In a city, the current number of literate people is 25,000. If the number of literate males decreases by 5% and the number of literate females increases by 10%, the total literate population becomes 25,250. What is the present number of literate males in the city?

Question - Hindi :

57. एक शहर में वर्तमान में साक्षर व्यक्तियों की संख्या 25,000 है। यदि साक्षर पुरुषों की संख्या में 5% की कमी आती है और साक्षर महिलाओं की संख्या में 10% की वृद्धि होती है, तो कुल साक्षर जनसंख्या 25,250 हो जाती है। शहर में साक्षर पुरुषों की वर्तमान संख्या क्या है ?

Options :

- A. 12,500
- B. 14,000
- ☒ C. 15,000 (CORRECT ANSWER)
- D. 16,500

Think
Smart
Eliminate
Fast!

5-Second Solution & Elimination Method :

 Technique : Equation & Substitution

Let Males = M, Females = F

Initial $\rightarrow M + F = 25,000$

Net Increase $\rightarrow 25,250 - 25,000 = +250$

$-5\% \text{ of } M + 10\% \text{ of } F = 250$

Multiply by 20 $\rightarrow -M + 2F = 5,000$

We know $\rightarrow 2M + 2F = 50,000$

Subtracting $\rightarrow 3M = 45,000$

$\rightarrow M = 15,000$

Same
Concept
Bigger
Results!

Practice
More
Score Higher!



Answer: C. 15,000

Trick #22: Continued Fraction Bottom-Up

Topic: Simplification

Question - English:

53. Which of the following represents the correct simplified value of the continued fraction: $x = 1 + \frac{1}{2 + \frac{1}{2 + \frac{1}{2}}}$

Question - Hindi:

53. निम्नलिखित में से कौन-सा सतत भिन्न का सही सरलीकृत मान दर्शाता है: $x = 1 + \frac{1}{2 + \frac{1}{2 + \frac{1}{2}}}$

Options:

- A. 15/13
- ☒ B. 17/12 (CORRECT ANSWER)
- C. 12/7
- D. 6/7

Quick Trick Remember!
! 😊

⚡ 5-Second Solution & Elimination Method:

 Technique: Continued Fraction Bottom-Up Solve

Expression: $x = 1 + \frac{1}{2 + \frac{1}{2 + \frac{1}{2}}}$

Step 1: Resolve the bottom-most fraction:

$$2 + \frac{1}{2} = \frac{5}{2}$$

Step 2: Substitute and simplify inverse:

$$2 + \frac{1}{\frac{5}{2}} = 2 + \frac{2}{5} = \frac{12}{5}$$

Step 3: Resolve final layer:

$$1 + \frac{1}{\frac{12}{5}} = 1 + \frac{5}{12} = \frac{17}{12}$$

Same Concept Bigger Results!
😊



Answer: B. 17/12

Trick #23: Mixed Fraction Decimal Conversion

Topic: Simplification

Question - English:

51. Simplify: $(3.2 - 1\frac{3}{5}) + (2\frac{1}{4} \div 0.5)$

Question - Hindi:

51. सरल कीजिए: $(3.2 - 1\frac{3}{5}) + (2\frac{1}{4} \div 0.5)$

Options:

- A. 8.2
- ☒ B. 6.1 (CORRECT ANSWER)
- C. 7.7
- D. 10.5

Think
Smart
Eliminate
Fast!

 **5-Second Solution & Elimination Method:**



Answer: B. 6.1

Solution! 

 **Technique:** Mixed Fractions & BODMAS

Expression: $(3.2 - 1\frac{3}{5}) + (2\frac{1}{4} \div 0.5)$

Step 1: Convert mixed fractions to decimals:

$$1\frac{3}{5} = 1.6$$

$$2\frac{1}{4} = 2.25$$

Step 2: Simplify parentheses:

$$3.2 - 1.6 = 1.6$$

$$2.25 \div 0.5 = 4.5$$

Step 3: Sum the results:

$$1.6 + 4.5 = 6.1$$

Same
Concept
Bigger
Results!

Practice
More
Score Higher!

Trick #24: BODMAS Rule

Topic: BODMAS Rule

Question - English:

53. Evaluate:

$$6 - \left[\frac{2}{3} \div \left\{ \frac{1}{6} + \left(\frac{1}{2} \times \left(1 - \frac{1}{3} \right) \right) \right\} \right]$$

Question - Hindi:

53. ज्ञात कीजिए।

Options:

- ☒ A. $14/3$ (CORRECT ANSWER)
B. $15/3$
C. $16/3$
D. $17/3$



⚡ 5-Second Solution & Elimination Method

📖 Technique: BODMAS Rule

Step 1: Inner brackets $\left(1 - \frac{1}{3} \right)$

$$\rightarrow \frac{2}{3}$$

Step 2: Multiply $\frac{1}{2} \times \frac{2}{3}$

$$\rightarrow \frac{1}{3}$$

Step 3: Curly braces $\left\{ \frac{1}{6} + \frac{1}{3} \right\}$

$$\rightarrow \frac{1}{6} + \frac{2}{6} = \frac{3}{6} = \frac{1}{2}$$

Step 4: Square brackets $\left[\frac{2}{3} \div \frac{1}{2} \right]$

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

Step 5: Final subtraction $6 - \frac{4}{3}$

$$\rightarrow \frac{18}{3} - \frac{4}{3} = \frac{14}{3}$$



Answer: A. $14/3$

Trick #25: Surd Simplification

Question - English:

52. What is the value of: $(\sqrt{18} + \sqrt{2})^2 - (\sqrt{8} + \sqrt{2})^2$

Question - Hindi:

52. निम्न का मान क्या है: $(\sqrt{18} + \sqrt{2})^2 - (\sqrt{8} + \sqrt{2})^2$

Options:

- ☒ A. 14 (CORRECT ANSWER)
B. 15
C. 16
D. 17

Think
Smart
Eliminate
Fast!

5-Second Solution & Elimination Method :

 Technique: Surd Simplification

Simplify surds:

$$\sqrt{18} = \sqrt{9 \times 2} = 3\sqrt{2}$$

$$\sqrt{8} = \sqrt{4 \times 2} = 2\sqrt{2}$$

Evaluate Term 1:

$$(\sqrt{18} + \sqrt{2})^2 = (3\sqrt{2} + \sqrt{2})^2 = (4\sqrt{2})^2 = 16 \times 2 = 32$$

Evaluate Term 2:

$$(\sqrt{8} + \sqrt{2})^2 = (2\sqrt{2} + \sqrt{2})^2 = (3\sqrt{2})^2 = 9 \times 2 = 18$$

Subtract Term 2 from Term 1:

$$32 - 18 = 14$$

Same
Concept
Bigger
Results!

Practice
More
Score Higher!



Answer: A. 14

Trick #26: Decimal to Fraction conversion

Topic: Decimal to Fraction conversion

Question - English:

51. Convert 3.375 into a fraction in simplest form.

Question - Hindi:

51. 3.375 को सरलतम रूप में भिन्न में परिवर्तित कीजिए।

Options:

- ☒ A. $27/8$ (CORRECT ANSWER)
B. $25/8$
C. $23/8$
D. $21/8$

Quick
Trick
Remember!
! 😊

⚡ 5-Second Solution & Elimination Method:

📄 Technique: Decimal to Fraction conversion

Given decimal: 3.375

Split into whole and fractional part:

$$\begin{aligned} 3.375 &= 3 + 0.375 \\ &= 3 + \frac{375}{1000} \end{aligned}$$

Divide numerator and denominator by 125:

$$0.375 = \frac{3}{8}$$

Combine into mixed and improper fraction:

$$3 + \frac{3}{8} = \frac{27}{8}$$

Same
Concept
Bigger
Results!
😊



Answer: A. $27/8$

Trick #27: Surd Comparison (Squaring)

Question - English :

51. Let $x = \sqrt{3} + \sqrt{5}$ and $y = \sqrt{8} + \sqrt{2}$. Which is greater?

Question - Hindi :

51. मान लीजिए $x = \sqrt{3} + \sqrt{5}$ और $y = \sqrt{8} + \sqrt{2}$ है। कौन-सा बड़ा है?

Options :

- A. $x = y$
- B. $x > y$
- ☒ C. $y > x$ (CORRECT ANSWER)
- D. Cannot be determined

Think
Smart
Eliminate
Fast!

⚡ 5-Second Solution & Elimination Method :

📌 Technique : Surd Comparison (Squaring)

Square $\rightarrow x^2 = (\sqrt{3} + \sqrt{5})^2 = 8 + 2\sqrt{15}$

Square $\rightarrow y^2 = (\sqrt{8} + \sqrt{2})^2 = 10 + 2\sqrt{16}$

Compare $\rightarrow 8 + 2(3.8) < 10 + 8$

Result $\rightarrow x < y$

Same
Concept
Bigger
Results!



Answer: y is greater

Practice
More
Score Higher!

Trick #28: Continued Fraction Bottom-Up

Topic: Continued Fraction Bottom-Up

Question - English:

53. Evaluate the continued fraction: $1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{2}}}$

Question - Hindi:

53. सतत भिन्न का मान ज्ञात कीजिए: $1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{2}}}$

Options:

- ☒ A. $8/5$ (CORRECT ANSWER)
B. $5/8$
C. $5/3$
D. $3/5$

Quick
Trick
Remember!
! 😊

⚡ 5-Second Solution & Elimination Method:

📖 Technique: Continued Fraction Bottom-Up

Step 1 $\rightarrow 1 + \frac{1}{2} = \frac{3}{2}$

Step 2 $\rightarrow 1 + \frac{2}{3} = \frac{5}{3}$

Step 3 $\rightarrow 1 + \frac{3}{5} = \frac{8}{5}$

Result $\rightarrow \frac{8}{5}$

Same
Concept
Bigger
Results!
😊



Answer: $8/5$

★ 7 Curated Speed Tricks from SSC CGL PYQs

CHAPTER 4: TIME, SPEED & WORK

Trick #29: LCM Efficiency Work Tracker

Topic: Time & Work

Question - English:

64. A and B can complete a task in 12 days and 18 days, respectively. They begin the work together, but B leaves after 4 days. How many more days will A take to finish the remaining work?

Question - Hindi:

64. A और B किसी कार्य को क्रमशः 12 दिन और 18 दिन में पूरा कर सकते हैं। वे साथ मिलकर कार्य प्रारंभ करते हैं, लेकिन B, 4 दिन बाद कार्य छोड़ देता है। A को बचा हुआ कार्य पूरा करने में कितने अतिरिक्त दिन लगेंगे?

Options:

- ☒ A. $5\frac{1}{3}$ days (CORRECT ANSWER)
B. $2\frac{3}{4}$ days
C. $1\frac{1}{5}$ days
D. $8\frac{6}{7}$ days

Think
Smart
Eliminate
Fast!

⚡ 5-Second Solution & Elimination Method:

🎯 Answer: A. $5\frac{1}{3}$ days

Solution! 📌

📌 Technique: Time & Work Efficiency LCM Method

Time: A = 12 days, B = 18 days.

LCM (Total Work) = 36 units.

Step 1: Efficiencies:

$$\text{Efficiency A} = 36/12 = 3 \text{ units/day}$$

$$\text{Efficiency B} = 36/18 = 2 \text{ units/day}$$

Step 2: Work done in 4 days together:

$$\text{Work done} = 4 \times (3 + 2) = 20 \text{ units}$$

$$\text{Remaining work} = 36 - 20 = 16 \text{ units}$$

Step 3: Time taken by A alone to finish remaining:

$$\text{Time A} = \frac{16}{3} = 5\frac{1}{3} \text{ days}$$

Same
Concept
Bigger
Results!

Practice
More
Score Higher!

Trick #30: Total Work LCM Method

Topic: Total Work LCM Method

Question - English:

61. A, B, and C can complete a certain task in 20, 30, and 60 days, respectively. How many days will it take for A to finish the work if he receives help from B and C every third day?

Question - Hindi:

61. A, B और C किसी कार्य को क्रमशः 20, 30 और 60 दिनों में पूरा कर सकते हैं। यदि A को प्रत्येक तीसरे दिन B और C से मदद मिलती है, तो उसे कार्य पूरा करने में कितने दिन लगेंगे?

Options:

- ☒ A. 15 days (CORRECT ANSWER)
B. 12 days
C. 10 days
D. 9 days

Quick
Trick
Remember!
! 😊

⚡ 5-Second Solution & Elimination Method:

📌 Technique: Total Work LCM Method

LCM of 20, 30, 60 = 60 units (Total Work)

Individual Efficiencies:

$$A = \frac{60}{20} = 3 \text{ units/day}$$

$$B = \frac{60}{30} = 2 \text{ units/day}$$

$$C = \frac{60}{60} = 1 \text{ unit/day}$$

Work Cycle of 3 days:

Day 1: A alone = 3 units

Day 2: A alone = 3 units

Day 3: A + B + C = 3 + 2 + 1 = 6 units

Total in 3 days = 3 + 3 + 6 = 12 units

Total cycles needed = $\frac{60}{12} = 5$ cycles

Total days required = $5 \times 3 = 15$ days

Same
Concept
Bigger
Results!
😊



Answer: A. 15 days

Trick #31: Present Value of Installments

Question - English:

58. A TV set is available for ₹19,650 in cash or for ₹3,100 as a cash down payment and three equal annual instalments. If the shopkeeper charges interest at the rate of 10% per annum compounded annually, calculate the amount of each instalment.

Question - Hindi:

58. एक टीवी सेट ₹19,650 नकद या ₹3,100 नकद अग्रिम भुगतान और तीन बराबर वार्षिक किश्तों में उपलब्ध है। यदि दुकानदार वार्षिक चक्रवृद्धि 10% की दर से ब्याज लेता है, तो प्रत्येक किश्त की राशि की गणना कीजिए।

Options:

- A. ₹ 9,655
- B. ₹ 7,655
- ☒ C. ₹ 6,655 (CORRECT ANSWER)
- D. ₹ 8,655

Think
Smart
Eliminate
Fast!

⚡ 5-Second Solution & Elimination Method:

📌 Technique: Present Value of Installments

Remaining Principal (P) = 19,650 - 3,100 = ₹16,550

Rate (R) = 10% p.a.

Time (t) = 3 years

Let each installment be X.

Formula:

$$P = \frac{X}{(1 + R/100)} + \frac{X}{(1 + R/100)^2} + \frac{X}{(1 + R/100)^3}$$

$$16,550 = X \left[\frac{10}{11} + \frac{100}{121} + \frac{1000}{1331} \right]$$

$$16,550 = X \left[\frac{(1210 + 1100 + 1000)}{1331} \right]$$

$$16,550 = X \left[\frac{3310}{1331} \right]$$

Solve for X:

$$X = 16,550 \times 1331 / 3310$$

$$X = 5 \times 1331 = ₹6,655$$

Same
Concept
Bigger
Results!

Practice
More
Score Higher!



Answer: C. ₹ 6,655

Trick #32: Equation Subtract Efficiency Equality

Topic: Time & Work

Question - English:

66. A and B can complete a certain task together in 30 days. After A works for 16 days, B is left to finish the remaining work by himself in 44 days. How many days would it take for B to complete the entire task on his own?

Question - Hindi:

66. A और B एक निश्चित कार्य को 30 दिनों में पूरा कर सकते हैं। A द्वारा 16 दिनों तक कार्य करने के बाद, B को शेष कार्य अकेले 44 दिनों में पूरा करना है। B को अकेले पूरा कार्य पूरा करने में कितने दिन लगेंगे?

Options:

- A. 40 days
- B. 50 days
- ☒ C. 60 days (CORRECT ANSWER)
- D. 70 days

Quick
Trick
Remember!
! 😊

⚡ 5-Second Solution & Elimination Method:

 Technique: Work Equations & Substitution

 Answer: C. 60 days

Let work rates per day be A and B.

Equations:

- 1) $30A + 30B = 1$
- 2) $16A + 44B = 1$

Step 1: Subtract equations:

$$(30A - 16A) + (30B - 44B) = 0$$

$$14A = 14B \Rightarrow A = B \text{ (efficiencies are equal)}$$

Step 2: Find B's rate:

$$30B + 30B = 1 \Rightarrow 60B = 1 \Rightarrow B = \frac{1}{60}$$

Step 3: Time taken by B alone = 60 days

Same
Concept
Bigger
Results!
😊

Trick #33: LCM Work Efficiency

Question - English:

61. A and B together can complete a work in 12 days. B and C together can complete the same work in 15 days. C and A together can do it in 20 days. In how many days can A alone complete the job?

Question - Hindi:

61. A और B मिलकर किसी कार्य को 12 दिनों में पूरा कर सकते हैं। B और C मिलकर उस कार्य को 15 दिनों में पूरा कर सकते हैं। C और A मिलकर उस कार्य को 20 दिनों में पूरा कर सकते हैं। A अकेले उस कार्य को कितने दिनों में पूरा कर सकता है ?

Options:

- ☒ A. 30 days (CORRECT ANSWER)
B. 20 days
C. 50 days
D. 15 days

Think
Smart
Eliminate
Fast!

⚡ 5-Second Solution & Elimination Method:

📌 Technique: LCM Work Efficiency

$$\text{LCM}(12, 15, 20) = 60 \text{ units (Total Work)}$$

$$A + B \text{ eff} = 60 / 12 = 5$$

$$B + C \text{ eff} = 60 / 15 = 4$$

$$C + A \text{ eff} = 60 / 20 = 3$$

$$2(A + B + C) = 12$$

$$A + B + C = 6$$

$$A's \text{ eff} = (A+B+C) - (B+C) = 6 - 4 = 2$$

$$A's \text{ Time} = 60 / 2 = 30 \text{ days}$$

Same
Concept
Bigger
Results!

Practice
More
Score Higher!



Answer: A. 30 days

Trick #34: Positive-Negative Efficiency

Topic: Positive-Negative Efficiency

Question - English:

68. A can build up a wall in 8 days while B can break it in 3 days. A has worked for 4 days and then B joined to work with A for another 2 days only. In how many days will A alone build up the remaining part of the wall?

Question - Hindi:

68. A एक दीवार को 8 दिन में बना सकता है जबकि B इसे 3 दिन में तोड़ सकता है। A ने 4 दिन कार्य किया है और फिर B ने A के साथ मिलकर केवल 2 दिन अतिरिक्त कार्य किया है। A अकेले दीवार का बचा हुआ भाग कितने दिन में बना लेगा?

Options:

- ☒ A. $7\frac{1}{3}$ days (CORRECT ANSWER)
B. 8 days
C. 9 days
D. 5 days



⚡ 5-Second Solution & Elimination Method:

📌 Technique: Positive-Negative Efficiency

A builds in 8 days (+3 eff)

B breaks in 3 days (-8 eff)

LCM = 24 units of wall

A works 4 days = $4 \times 3 = +12$

A+B work 2 days = $2 \times (3-8) = 2 \times (-5) = -10$

Current wall state = $12 - 10 = 2$ units built

Remaining to build = $24 - 2 = 22$ units

Time for A = $\frac{22}{3} = 7\frac{1}{3}$ days



Answer: A. $7\frac{1}{3}$ days

Trick #35: Time & Work Efficiency

Question - English :

62. A is three times as efficient as a worker than B, which allows A to complete a job in 60 days less than B. If they work together, they can finish the job in:

Question - Hindi :

62. A, B की तुलना में तीन गुना कुशल श्रमिक है, जिसके कारण A किसी कार्य को B से 60 दिन कम समय में पूरा कर लेता है। यदि वे दोनों साथ मिलकर काम करें, तो वे उस कार्य को कितने समय में पूरा कर सकते हैं ?

Options :

- A. 19.2 days
- ☒ B. 22.5 days (CORRECT ANSWER)
- C. 16 days
- D. 20 days

Think
Smart
Eliminate
Fast!

5-Second Solution & Elimination Method :

 Technique : Time & Work Efficiency

Efficiency ratio A : B = 3 : 1

Time ratio A : B = 1 : 3

Let A take t days, B take $3t$ days.

Difference: $3t - t = 60 \rightarrow 2t = 60 \rightarrow t = 30$ days

A = 30 days, B = 90 days. Total work = 90 units

Combined efficiency = $3 + 1 = 4$ units/day

Time together = $90 / 4 = 22.5$ days

Same
Concept
Bigger
Results!



Answer: B. 22.5 days

Practice
More
Score Higher!

* 10 Curated Speed Tricks from SSC CGL PYQs

CHAPTER 5: GEOMETRY & MENSURATION

Trick #36: Incircle Formula

Topic: Geometry & Mensuration

Question - English:

A circular disc of radius 7 cm is inscribed inside an equilateral triangle. What is the approximate area of the remaining portion of the triangle?

Question - Hindi:

7 सेमी त्रिज्या वाली एक वृत्ताकार डिस्क एक समबाहु त्रिभुज के अन्दर अन्तर्निहित है। त्रिभुज के शेष भाग का अनुमानित क्षेत्रफल क्या है?

Options:

- ☒ A) 100.6 cm² (CORRECT ANSWER)
- B) 148.2 cm²
- C) 200.3 cm²
- D) 155.6 cm²

Quick
Trick
Remember!
! 😊

5-Second Solution & Elimination Method:

Technique: Incircle of Equilateral Triangle

Formula for inscribed circle radius (r) in an equilateral triangle of side (a): $r = \frac{a}{2\sqrt{3}}$

$$7 = \frac{a}{2\sqrt{3}} \Rightarrow a = 14\sqrt{3}$$

Calculate Area of Triangle:

$$\text{Area} = \frac{\sqrt{3}}{4} \times a^2$$

$$\text{Area} = \frac{\sqrt{3}}{4} \times (14\sqrt{3})^2$$

$$\text{Area} = \frac{\sqrt{3}}{4} \times (196 \times 3) = 147\sqrt{3}$$

$$\text{Since } \sqrt{3} \approx 1.732, \text{ Area} \approx 147 \times 1.732 = 254.6 \text{ cm}^2$$

Calculate Area of Circle:

$$\text{Area} = \pi r^2 = \frac{22}{7} \times 7^2 = 154 \text{ cm}^2$$

Calculate Remaining Area:

$$\text{Remaining} = \text{Triangle Area} - \text{Circle Area}$$

$$\text{Remaining} = 254.6 - 154 = 100.6 \text{ cm}^2$$

Note: The correct calculation points to 100.6 cm² (Option A).



Answer: A) 100.6 cm²

Trick #37: Similar Triangles Area Theorem

Question - English :

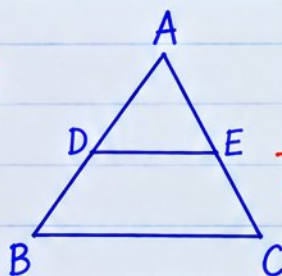
In $\triangle ABC$, a line segment DE is parallel to BC , with D on AB and E on AC . If the ratio of the area of $\triangle ADE$ to the area of the trapezoid $DECB$ is $4:21$, what is the ratio of AD to DB ?

Question - Hindi :

$\triangle ABC$ में, एक रेखाखंड DE , BC के समानांतर है, जिसमें D , AB पर और E , AC पर है। यदि $\triangle ADE$ के क्षेत्रफल का समलंब चतुर्भुज $DECB$ के क्षेत्रफल से अनुपात $4:21$ है, तो AD और DB का अनुपात क्या है?

Options :

- ☒ A) 2:3 (CORRECT ANSWER)
 B) 2:5
 C) 3:5
 D) 4:5



Think
Smart
Eliminate
Fast!

⚡ 5-Second Solution & Elimination Method :

Technique : Similar Triangles Area Theorem

Given $\text{Area}(\triangle ADE) : \text{Area}(\text{Trapezoid } DECB) = 4 : 21$

Total $\text{Area}(\triangle ABC) = 4 + 21 = 25$ units

Since $DE \parallel BC$, $\triangle ADE \sim \triangle ABC$.

The ratio of their areas equals the square of the ratio of their corresponding sides:

$$\frac{\text{Area}(\triangle ADE)}{\text{Area}(\triangle ABC)} = \left(\frac{AD}{AB}\right)^2$$

$$\frac{4}{25} = \left(\frac{AD}{AB}\right)^2$$

Take the square root:

$$\frac{AD}{AB} = \frac{2}{5}$$

This means $AD = 2$ units, and $AB = 5$ units.

Calculate DB :

$$DB = AB - AD = 5 - 2 = 3 \text{ units.}$$

Ratio $AD : DB = 2 : 3$



Answer: A) 2:3

Same
Concept
Bigger
Results!

Practice
More
Score Higher!

CHAPTER 5: GEOMETRY & MENSURATION

Trick #38: Volume Conservation (Scaling Rule)

Topic: Volume Conservation / Scaling Rule

Question - English:

A metal sphere having a radius of 10 centimeters is melted down and molded into 8 identical smaller solid spheres. What is the ratio of the surface area of the original sphere to the total surface area of all 8 smaller spheres?

Question - Hindi:

10 सेमी त्रिज्या वाले एक धातु के गोले को पिघलाकर 8 समान छोटे ठोस गोले में ढाला गया है। मूल गोले के पृष्ठीय क्षेत्रफल का सभी 8 छोटे गोलों के कुल पृष्ठीय क्षेत्रफल से अनुपात क्या है?

Options:

- ☒ A) 1:2 (CORRECT ANSWER)
- B) 2:1
- C) 1:4
- D) 1:1



⚡ 5-Second Solution & Elimination Method:

Technique: Volume Conservation / Scaling Rule

When 1 large sphere is melted into 'n' identical smaller spheres, the volume is conserved.

$$n = \left(\frac{R}{r}\right)^3$$

$$8 = \left(\frac{R}{r}\right)^3 \Rightarrow \frac{R}{r} = 2 \Rightarrow r = \frac{R}{2}$$

Calculate Surface Area (SA) Ratio:

$$\text{Original SA} = 4\pi R^2$$

$$\text{Total New SA} = 8 \times (4\pi r^2)$$

Substitute $r = \frac{R}{2}$ into New SA:

$$\text{Total New SA} = 8 \times 4\pi \left(\frac{R}{2}\right)^2$$

$$\text{Total New SA} = 8 \times 4\pi \left(\frac{R^2}{4}\right) = 8\pi R^2$$

Ratio:

$$\text{Original SA} : \text{Total New SA}$$

$$4\pi R^2 : 8\pi R^2$$

$$1 : 2$$



Answer: A) 1:2

Trick #39: Volume Equating Method

Question - English :

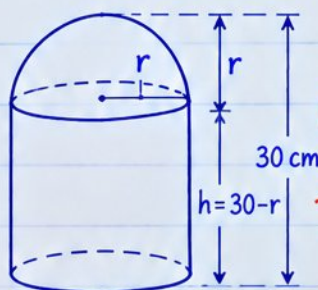
A cylinder and hemisphere have the same radius. Their combined height is 30 cm. If the cylinder and hemisphere have equal volumes, find the radius.

Question - Hindi :

एक बेलन और एक अर्धगोले की त्रिज्या समान है। उनकी संयुक्त ऊँचाई 30 सेमी है। यदि बेलन और अर्धगोले का आयतन समान है, तो त्रिज्या ज्ञात कीजिए।

Options :

- A) 12cm
B) 15cm
C) 16cm
☒ D) 18cm (CORRECT ANSWER)



Think
Smart
Eliminate
Fast!

⚡ 5-Second Solution & Elimination Method :

📌 Technique : Volume Equating Method

Given: Radius is same (r). Combined height = 30 cm.

The height of a hemisphere is exactly its radius (r).

∴ Cylinder height (h) = $30 - r$

Equate Volumes:

Volume of Cylinder = Volume of Hemisphere

$$\pi r^2 h = \frac{2}{3} \pi r^3$$

Cancel πr^2 from both sides:

$$h = \frac{2}{3} r$$

Substitute $h = 30 - r$:

$$30 - r = \frac{2}{3} r$$

$$30 = r + \frac{2}{3} r$$

$$30 = \frac{5}{3} r$$

Solve for r :

$$r = \frac{30 \times 3}{5}$$

$$r = \frac{90}{5} = 18 \text{ cm}$$

Same
Concept
Bigger
Results!

Practice
More
Score Higher!



Answer: D) 18cm

Trick #40: Pythagorean Triplet Recognition

Question - English :

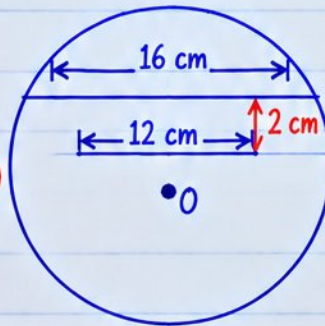
There are two parallel chords measuring 16 cm and 12 cm, both situated on the same side of the center of a circle. The space between the two chords is 2 cm. What is the radius of the circle?

Question - Hindi :

एक वृत्त के केंद्र के एक ही ओर स्थित 16 सेमी और 12 सेमी माप वाली दो समांतर जीवाएँ हैं। दोनों जीवाओं के बीच की दूरी 2 सेमी है। वृत्त की त्रिज्या क्या है ?

Options :

- A) 8 cm
☒ B) 10 cm (CORRECT ANSWER)
C) 12 cm
D) 15 cm



Think
Smart
Eliminate
Fast!

⚡ 5-Second Solution & Elimination Method :

📌 Technique: Pythagorean Triplet Recognition

Half-chords are 8 cm ($16/2$) and 6 cm ($12/2$).

Notice the numbers 6 and 8. The classic Pythagorean triplet is (6, 8, 10).

If radius $r = 10$:

$$\text{Distance to 16 cm chord} = \sqrt{(10^2 - 8^2)} = 6 \text{ cm}$$

$$\text{Distance to 12 cm chord} = \sqrt{(10^2 - 6^2)} = 8 \text{ cm}$$

Difference in distances:

$$8 - 6 = 2 \text{ cm (Exactly matches the given space between chords!)}$$

Thus, the radius must be 10 cm without solving the quadratic equation.

Same
Concept
Bigger
Results!

Practice
More
Score Higher!



Answer: B) 10 cm

Trick #41: Common Tangent Identities

Question - English :

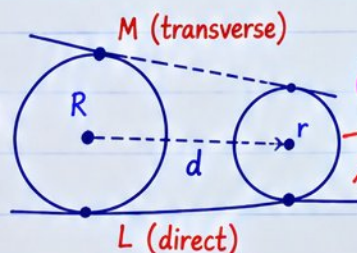
The distance between the centers of two circles is d . The lengths of their direct and transverse common tangents are L and M , respectively. If $L^2 + M^2 = 200$ and the sum of the squares of their radii is 100, what is the value of d ?

Question - Hindi :

दो वृत्तों के केंद्रों के बीच की दूरी d है। उनकी सीधी और अनुप्रस्थ उभयनिष्ठ स्पर्श रेखाओं की लंबाइयाँ क्रमशः L और M हैं। यदि $L^2 + M^2 = 200$ और उनकी त्रिज्याओं के वर्गों का योग 100 है, तो d का मान क्या है?

Options :

- ☐ A) 10
☒ B) $10\sqrt{2}$ (CORRECT ANSWER)
☐ C) $5\sqrt{2}$
☐ D) 20



Think Smart
Eliminate Fast!

⚡ 5-Second Solution & Elimination Method :

📌 **Technique :** Common Tangent Identities

Direct Common Tangent (L):

$$L^2 = d^2 - (R - r)^2 = d^2 - (R^2 + r^2 - 2Rr)$$

Transverse Common Tangent (M):

$$M^2 = d^2 - (R + r)^2 = d^2 - (R^2 + r^2 + 2Rr)$$

Add both equations:

$$L^2 + M^2 = 2d^2 - 2(R^2 + r^2)$$

Substitute given values ($L^2 + M^2 = 200$, $R^2 + r^2 = 100$):

$$200 = 2d^2 - 2(100)$$

$$200 = 2d^2 - 200$$

$$400 = 2d^2 \quad (\text{Wait, } 200 + 200 = 400)$$

$$400 = 2d^2$$

$$d^2 = 200$$

$$d = \sqrt{200} = 10\sqrt{2}$$

Same Concept
Bigger Results!

Practice More
Score Higher!



Answer: B) $10\sqrt{2}$

Trick #42: Sector-Triangle Area Method

Question - English :

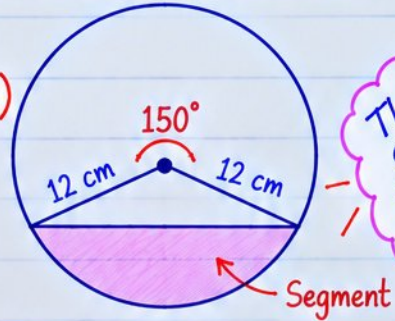
What is the area of the segment formed by a chord in a circle of radius 12 cm, if the angle subtended at the center is 150° ?

Question - Hindi :

12 सेमी त्रिज्या वाले एक वृत्त में एक जीवा द्वारा बनाए गए रेखाखंड का क्षेत्रफल क्या है, यदि केंद्र पर अंतरित कोण 150° है?

Options :

- ☒ A) $60\pi - 36$ (CORRECT ANSWER)
B) $36\pi - 36$
C) $60\pi - 72$
D) $36\pi - 72$



Think
Smart
Eliminate
Fast!

⚡ 5-Second Solution & Elimination Method :

📌 **Technique :** Sector-Triangle Area Method

Area of Segment = Area of Sector - Area of Triangle

1. Area of Sector:

$$\begin{aligned}\text{Formula: } & \frac{\theta}{360} \times \pi r^2 \\ &= \frac{150}{360} \times \pi \times (12)^2 \\ &= \frac{5}{12} \times \pi \times 144 \\ &= 5 \times 12\pi = 60\pi\end{aligned}$$

2. Area of Triangle:

$$\begin{aligned}\text{Formula: } & \frac{1}{2} r^2 \sin(\theta) \\ &= \frac{1}{2} \times (12)^2 \times \sin(150^\circ) \\ &= \frac{1}{2} \times 144 \times \sin(30^\circ) \quad [\text{Since } \sin(150) = \sin(30) = \frac{1}{2}] \\ &= 72 \times \frac{1}{2} = 36\end{aligned}$$

3. Final Segment Area:

$$60\pi - 36$$



Answer: A) $60\pi - 36$

Same
Concept
Bigger
Results!

Practice
More
Score Higher!

Trick #43: Similarity Scaling Rule

Question - English :

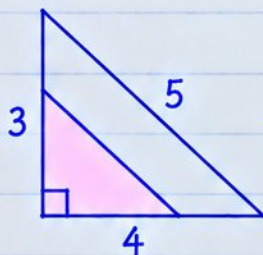
A right triangle has sides 3, 4, and 5. A smaller triangle is drawn inside it with its vertices on the sides of the larger triangle, such that it is similar to the larger triangle. If its perimeter is 6, what is its area?

Question - Hindi :

एक समकोण त्रिभुज की भुजाएँ 3, 4 और 5 हैं। इसके अंदर एक छोटा त्रिभुज खींचा गया है जिसके शीर्ष बड़े त्रिभुज की भुजाओं पर इस प्रकार रखे गए हैं कि वह बड़े त्रिभुज के समरूप हो। यदि इसका परिमाप 6 है, तो इसका क्षेत्रफल क्या है ?

Options :

- ☒ A) 1.5 (CORRECT ANSWER)
B) 2.4
C) 3
D) 6



Think
Smart
Eliminate
Fast!

⚡ 5-Second Solution & Elimination Method :

📌 **Technique :** Similarity Scaling Rule

Original Triangle Perimeter = $3 + 4 + 5 = 12$

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

Smaller similar triangle has Perimeter = 6.

Calculate Scale Factor:

Scale = New Perimeter / Old Perimeter

Scale = $6 / 12 = \frac{1}{2}$

When length is scaled by 'k', area is scaled by 'k²':

New Area = Old Area $\times$ (Scale)²

New Area = $6 \times (\frac{1}{2})^2$

New Area = $6 \times (\frac{1}{4}) = 1.5$

Same
Concept
Bigger
Results!

Practice
More
Score Higher!



Answer: A) 1.5

Trick #44: Square Circle Area Deficit

Topic : Mensuration

Question - English :

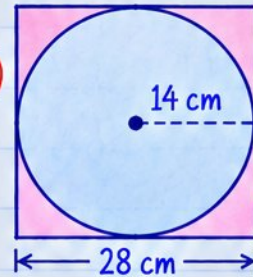
71. A circular logo of radius 14 cm is fitted perfectly inside a square plaque. Find the area of unused square space around the circle.

Question - Hindi :

71. 14 सेमी त्रिज्या वाला एक वृत्ताकार लोगो एक वर्गाकार पट्टिका के अंदर पूरी तरह से फिट किया गया है। वृत्त के चारों ओर अप्रयुक्त वर्गाकार स्थान का क्षेत्रफल ज्ञात कीजिए।

Options :

- ☒ A. 168.25 cm^2 (CORRECT ANSWER)
B. 56.78 cm^2
C. 161.54 cm^2
D. 64.26 cm^2



Think
Smart
Eliminate
Fast!

⚡ 5-Second Solution & Elimination Method :

Answer: A. 168.25 cm^2

Solution! 📌

Technique: Inscribed Circle Area Difference

Circle radius = 14 cm, fitted perfectly inside square plaque.

Step 1: Dimensions of square:

Side length of square = diameter of circle = 28 cm

Area of square = $28^2 = 784 \text{ cm}^2$

Step 2: Calculate circle area:

Area of circle = $\pi \times 14^2 = 3.14159 \times 196 \approx 615.75 \text{ cm}^2$

Step 3: Unused plaque area:

Unused area = $784 - 615.75 = 168.25 \text{ cm}^2$

Same
Concept
Bigger
Results!

Practice
More
Score Higher!

Trick #45: Centroid Similarity Area Ratio

Question - English :

70. In triangle ABC, a line segment DE is drawn through the centroid G, parallel to side BC. D lies on AB and E lies on AC. What is the ratio of the area of the smaller triangle ADE to the area of the trapezoid DECB?

Question - Hindi :

70. त्रिभुज ABC में, केंद्रक G से होकर, भुजा BC के समांतर एक रेखाखंड DE खींचा गया है। D, AB पर और E, AC पर स्थित है। छोटे त्रिभुज ADE के क्षेत्रफल और समलंब चतुर्भुज DECB के क्षेत्रफल का अनुपात क्या है?

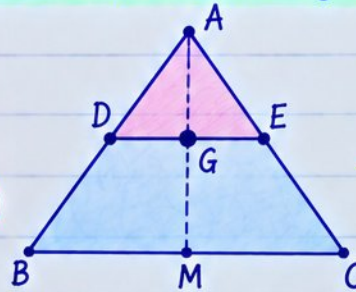
Options :

A. 1:1

B. 1:2

☒ C. 4:5 (CORRECT ANSWER)

D. 4:9



Think Smart
Eliminate Fast!

⚡ 5-Second Solution & Elimination Method :

📌 **Technique :** Centroid Similarity Area Ratio

Let median be AM. Centroid G divides AM in 2:1 ratio.

$$\rightarrow \frac{AG}{AM} = \frac{2}{3}$$

Since $DE \parallel BC$, triangle ADE is similar to triangle ABC.

$$\text{Scale factor } (k) = \frac{AG}{AM} = \frac{2}{3}$$

$$\text{Area ratio } (ADE / ABC) = k^2 = \left(\frac{2}{3}\right)^2 = \frac{4}{9}$$

Let Area of ABC = 9 units

$\rightarrow$ Area of ADE = 4 units

$\rightarrow$ Area of trapezoid DECB = $9 - 4 = 5$ units

Ratio of Area(ADE) : Area(DECB) = 4 : 5



Answer: C. 4:5

Same Concept
Bigger Results!

Practice More
Score Higher!

5 Curated Speed Tricks from SSC CGL PYQs

CHAPTER 6: TRIGONOMETRY

Trick #46: Weighted Cost Equations

Question - English :

58. A baker ordered 10 kg of premium flour and some additional kg of standard flour. The price of premium flour per kg was twice that of the standard flour. Due to an ordering error, the quantities of the two types of flour were interchanged. This decreased the total cost by 25%. Find the ratio of the quantity of premium flour to standard flour in the original order.

Question - Hindi :

58. एक बेकर ने 10 किलो प्रीमियम आटा और कुछ अतिरिक्त किलो मानक आटा मंगवाया है। प्रति किलो प्रीमियम आटे का मूल्य, मानक आटे से दोगुना था। ऑर्डरिंग त्रुटि के कारण, दो प्रकार के आटे की मात्रा आपस में बदल जाती है। इससे कुल मूल्य में 25% की कमी आती है। मूल ऑर्डर में प्रीमियम आटे की मात्रा और मानक आटे की मात्रा का अनुपात ज्ञात कीजिए।

Options :

- ☐ A. 1:2
☒ B. 5:2 (CORRECT ANSWER)
☐ C. 3:4
☐ D. 4:5



Think
Smart
Eliminate
Fast!

⚡ 5-Second Solution & Elimination Method :

📌 **Technique :** Weighted Cost Equations

Let Standard Flour = x kg.

Price: Premium = 2, Standard = 1

Original Cost $\rightarrow 10(2) + x(1) = 20 + x$

Error Cost $\rightarrow x(2) + 10(1) = 2x + 10$

Cost decreased by 25% (So error cost is 75% or $\frac{3}{4}$ of original):

$$\begin{aligned}
 \frac{3}{4} (20 + x) &= 2x + 10 \\
 60 + 3x &= 8x + 40 \\
 20 &= 5x \\
 x &= 4
 \end{aligned}$$

Ratio (Prem:Std) $\rightarrow 10 : 4 = 5 : 2$



Answer: B. 5:2

Same
Concept
Bigger
Results!

Practice
More
Score Higher!

Trick #47: Height-Distance Trigonometry

Question - English :

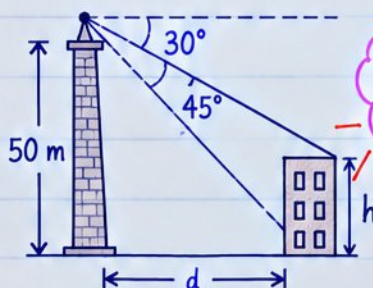
65. A tower stands 50 meters tall. From its peak, the angles of depression to the top and bottom of a nearby building are measured at 30° and 45° , respectively. Determine the approximate height of the building as well as the horizontal distance separating the tower from the building.

Question - Hindi :

65. एक मीनार 50 मीटर ऊँची है। इसके शिखर से, पास की एक इमारत के ऊपर और नीचे के अवनमन कोण क्रमशः 30° और 45° मापे गए हैं। इमारत की अनुमानित ऊँचाई और मीनार को इमारत से अलग करने वाली क्षैतिज दूरी ज्ञात कीजिए।

Options :

- ☒ A. height = 21 m , distance = 50 m
B. height = 25 m , distance = 25 m
C. height = 28 m , distance = 15 m
D. height = 18 m , distance = 15 m



Think
Smart
Eliminate
Fast!

⚡ 5-Second Solution & Elimination Method :

📌 **Technique :** Height-Distance Trigonometry

Height of Tower (H) = 50 m

Let height of building = h

Let distance between tower and building = d

Angle to bottom = 45° :

$$\tan(45^\circ) = \frac{50}{d} \rightarrow 1 = \frac{50}{d} \rightarrow d = 50 \text{ m}$$

Angle to top = 30° :

$$\tan(30^\circ) = \frac{50-h}{d}$$

$$\frac{1}{\sqrt{3}} = \frac{50-h}{50}$$

$$50-h = \frac{50}{\sqrt{3}} \approx \frac{50}{1.732} = 28.87 \text{ m}$$

$$h = 50 - 28.87 \approx 21.13 \text{ m} \approx 21 \text{ m}$$

Same
Concept
Bigger
Results!

Practice
More
Score Higher!



Answer: A. height = 21 m , distance = 50 m

Trick #48: Ratio Constant Term

Question - English :

53. The number of red, blue, and green marbles in a bag is in the ratio 3 : 4 : 6. If 20 red marbles, 15 blue marbles, and an unknown number of green marbles are added to the bag, the ratio of red, blue, and green marbles becomes 4 : 5 : 7. Determine the number of green marbles added.

Question - Hindi :

53. एक थैले में लाल, नीले और हरे कंचों की संख्या का अनुपात 3 : 4 : 6 है। यदि थैले में 20 लाल कंचे, 15 नीले कंचे और अज्ञात संख्या में हरे कंचे डाले जाएँ तो लाल, नीले और हरे कंचों का अनुपात 4 : 5 : 7 हो जाता है। डाले गए हरे कंचों की संख्या ज्ञात कीजिए।

Options :

- A. 3
☒ B. 5 (CORRECT ANSWER)
 C. 7
 D. 9



Think
Smart
Eliminate
Fast!

⚡ 5-Second Solution & Elimination Method :

📌 Technique: Ratio Constant Term

$$R : B : G = 3x : 4x : 6x$$

After adding 20 Red and 15 Blue, new ratio $R : B = 4 : 5$

$$\frac{(3x) + 20}{(4x) + 15} = \frac{4}{5}$$

$$15x + 100 = 16x + 60 \rightarrow x = 40$$

$$\text{Original Green} = 6(40) = 240$$

$$\text{New Green units} = 7. (\text{Since } 4 \text{ units of Red} = 3(40) + 20 = 140 \rightarrow 1 \text{ unit} = 35)$$

$$\text{New Green} = 7 \times 35 = 245$$

$$\text{Green added} = 245 - 240 = 5$$



Answer: B. 5

Same
Concept
Bigger
Results!

Practice
More
Score Higher!

Trick #49: Pythagorean Triplet

Question - English :

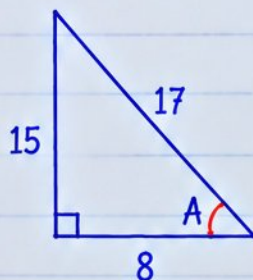
75. If $\sec A = \frac{17}{8}$ and A is acute, find $\frac{34 \sin A + 15 \cot A}{68 \cos A - 16 \tan A}$.

Question - Hindi :

75. यदि $\sec A = \frac{17}{8}$ और A न्यूनकोण है, तो $\frac{34 \sin A + 15 \cot A}{68 \cos A - 16 \tan A}$ ज्ञात कीजिए।

Options :

- A. $\frac{19}{20}$
☒ B. $\frac{38}{25}$ (CORRECT ANSWER)
 C. $\frac{19}{10}$
 D. $\frac{38}{15}$



Think
Smart
Eliminate
Fast!

⚡ 5-Second Solution & Elimination Method :

📌 Technique : Pythagorean Triplet

Triplet $\rightarrow 8, 15, 17$

Subs $\rightarrow \sin = \frac{15}{17}, \cos = \frac{8}{17}$

$\cot = \frac{8}{15}, \tan = \frac{15}{8}$

Num $\rightarrow 34\left(\frac{15}{17}\right) + 15\left(\frac{8}{15}\right) = 30 + 8 = 38$

Den $\rightarrow 68\left(\frac{8}{17}\right) - 16\left(\frac{15}{8}\right) = 32 - 30 = 2$

Result $\rightarrow \frac{38}{2} = 19$

Same
Concept
Bigger
Results!

Practice
More
Score Higher!



Answer: 19

Trick #50: Sine Rule and Trigonometry

Question - English :

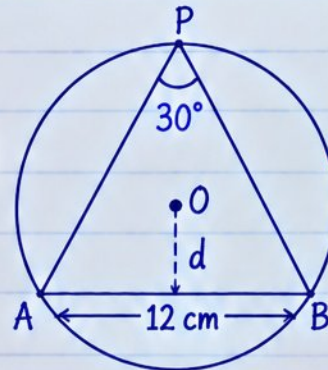
74. A chord of a circle has a length of 12 cm. The angle subtended by the chord at a point on the circumference is 30° . What is the distance from the center of the circle to the chord?

Question - Hindi :

74. एक वृत्त की जीवा की लंबाई 12 सेमी है। परिधि पर स्थित एक बिंदु पर जीवा द्वारा बनाया गया कोण 30° है। वृत्त के केंद्र से जीवा की दूरी कितनी है?

Options :

- ☒ A. $6\sqrt{3}$ cm (CORRECT ANSWER)
B. $3\sqrt{3}$ cm
C. 6 cm
D. 3 cm



Think
Smart
Eliminate
Fast!

⚡ 5-Second Solution & Elimination Method :

📌 **Technique :** Sine Rule and Trigonometry

Angle subtended at center = $2 \times 30^\circ = 60^\circ$

Since $OA = OB = R$, $\triangle OAB$ is Equilateral.

Radius R = Chord Length = 12 cm

Distance to chord (d) = $R \times \cos(30^\circ)$

$$= 12 \times \left(\frac{\sqrt{3}}{2}\right) = 6\sqrt{3} \text{ cm}$$

Same
Concept
Bigger
Results!

Practice
More
Score Higher!



Answer: A. $6\sqrt{3}$ cm

1. Squares (11^2 to 30^2)

$$11^2 = 121$$

$$12^2 = 144$$

$$13^2 = 169$$

$$14^2 = 196$$

$$15^2 = 225$$

$$16^2 = 256$$

$$17^2 = 289$$

$$18^2 = 324$$

$$19^2 = 361$$

$$20^2 = 400$$

$$21^2 = 441$$

$$22^2 = 484$$

$$23^2 = 529$$

$$24^2 = 576$$

$$25^2 = 625$$

$$26^2 = 676$$

$$27^2 = 729$$

$$28^2 = 784$$

$$29^2 = 841$$

$$30^2 = 900$$

Important
Squares
for Quick
Calculation!

Practice
More
Score Higher!

2. Cubes (2^3 to 15^3)

$$2^3 = 8$$

$$3^3 = 27$$

$$4^3 = 64$$

$$5^3 = 125$$

$$6^3 = 216$$

$$7^3 = 343$$

$$8^3 = 512$$

$$9^3 = 729$$

$$10^3 = 1000$$

$$11^3 = 1331$$

$$12^3 = 1728$$

$$13^3 = 2197$$

$$14^3 = 2744$$

$$15^3 = 3375$$

Important
Cubes for
Quick
Calculation!

Practice
More
Score Higher!

3. Fraction to Percentage Table

$\frac{1}{2} = 50\%$	$\frac{1}{3} = 33.33\%$	$\frac{1}{4} = 25\%$	$\frac{1}{5} = 20\%$
$\frac{1}{6} = 16.67\%$	$\frac{1}{7} = 14.28\%$	$\frac{1}{8} = 12.5\%$	$\frac{1}{9} = 11.11\%$
$\frac{1}{10} = 10\%$	$\frac{1}{11} = 9.09\%$	$\frac{1}{12} = 8.33\%$	$\frac{1}{13} = 7.69\%$
$\frac{1}{14} = 7.14\%$	$\frac{1}{15} = 6.67\%$	$\frac{1}{16} = 6.25\%$	$\frac{1}{17} = 5.88\%$
$\frac{1}{18} = 5.55\%$	$\frac{1}{19} = 5.26\%$	$\frac{1}{20} = 5\%$	$\frac{2}{3} = 66.67\%$

Useful
Table for
Quick
Revision!

Practice
More
Score Higher!

4. Essential Pythagorean Triplets

(3, 4, 5) • (5, 12, 13) • (7, 24, 25)
(8, 15, 17) • (9, 40, 41) • (11, 60, 61)
(20, 21, 29)



Connect with Jhatpat Taiyari



– Instagram: @jhatpattaiyari



– YouTube: Jhatpat Taiyari



– Tagline: हर सवाल, सबसे तेज़ हल

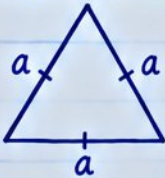
Follow
Learn
Practice
Succeed!

Small
Steps
Big
Results!

CHAPTER 7: 🧠 LAST 48 HOURS – MEMORY SHEET

5. Geometry & 2D Mensuration Quick Revision

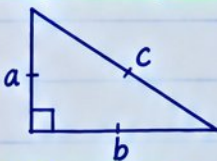
- Equilateral Triangle:



$$\text{Area} = \frac{\sqrt{3}}{4} a^2, \quad \text{Height} = \frac{\sqrt{3}}{2} a$$

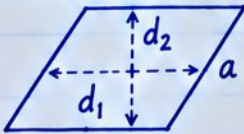
$$\text{Inradius } r = \frac{a}{2\sqrt{3}}, \quad \text{Circumradius } R = \frac{a}{\sqrt{3}}$$

- Right-Angled Triangle:



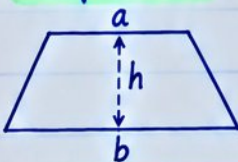
$$\text{Inradius } r = \frac{a+b-c}{2}, \quad \text{Circumradius } R = \frac{\text{Hypotenuse}}{2}$$

- Rhombus:



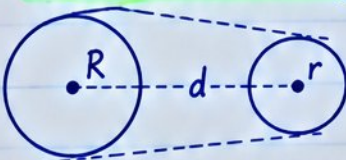
$$\text{Area} = \frac{1}{2} \times d_1 \times d_2, \quad \text{Side Relation: } 4a^2 = d_1^2 + d_2^2$$

- Trapezium:



$$\text{Area} = \frac{1}{2} \times (\text{Sum of Parallel Sides}) \times \text{Distance between them}$$

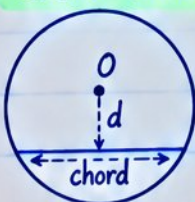
- Circle Common Tangents:



$$\text{Direct Common Tangent: } L = \sqrt{d^2 - (R-r)^2}$$

$$\text{Transverse Common Tangent: } M = \sqrt{d^2 - (R+r)^2}$$

- Chord Distance:



$$\text{Half-chord} = \sqrt{R^2 - d^2}, \quad \text{Distance } d = \sqrt{R^2 - \left(\frac{\text{chord}}{2}\right)^2}$$

CHAPTER 7: LAST 48 HOURS — MEMORY SHEET

6. Trigonometry & Algebra Rapid Identities

- Trig Values (Standard Angles):

$$\sin 30^\circ = \frac{1}{2}, \quad \sin 45^\circ = \frac{1}{\sqrt{2}}, \quad \sin 60^\circ = \frac{\sqrt{3}}{2}$$

$$\tan 30^\circ = \frac{1}{\sqrt{3}}, \quad \tan 45^\circ = 1, \quad \tan 60^\circ = \sqrt{3}$$

- Pythagorean Trig Identities:

$$\sin^2 \theta + \cos^2 \theta = 1$$

$$\sec^2 \theta - \tan^2 \theta = 1 \rightarrow (\sec \theta + \tan \theta) = \frac{1}{(\sec \theta - \tan \theta)}$$

$$\operatorname{cosec}^2 \theta - \cot^2 \theta = 1 \rightarrow (\operatorname{cosec} \theta + \cot \theta) = \frac{1}{(\operatorname{cosec} \theta - \cot \theta)}$$

- Trig Max / Min Values:

$$\text{Maximum of } (a \sin \theta + b \cos \theta) = +\sqrt{a^2 + b^2}$$

$$\text{Minimum of } (a \sin \theta + b \cos \theta) = -\sqrt{a^2 + b^2}$$

- Speed Algebra Expansions:

$$\text{If } x + \frac{1}{x} = k \rightarrow x^2 + \frac{1}{x^2} = k^2 - 2 \quad \Bigg| \quad x^3 + \frac{1}{x^3} = k^3 - 3k$$

$$\text{If } x - \frac{1}{x} = k \rightarrow x^2 + \frac{1}{x^2} = k^2 + 2 \quad \Bigg| \quad x^3 - \frac{1}{x^3} = k^3 + 3k$$

$$\text{If } a + b + c = 0 \rightarrow a^3 + b^3 + c^3 = 3abc$$

CHAPTER 7: LAST 48 HOURS – MEMORY SHEET

7. Zero-Pen Elimination Rules & Exam Strategy

✓ Filter 1: Unit Digit Verification

Always check the last digit before multiplying large numbers. If all options have distinct last digits, solve in 2 seconds!

✓ Filter 2: Digital Sum (Root 9 Elimination)

Digital Sum of LHS must equal Digital Sum of RHS (Cast out 9s). Eliminates 3 out of 4 options instantly.

✓ Filter 3: Divisibility Prime Multipliers

Questions involving π always have answers divisible by 11 (or 7). Questions with days/rates frequently preserve factors of 7, 13, 19.

✓ Filter 4: Boundary & Scale Estimation

Never calculate exact decimals when options differ by $>15\%$. Round off to base 100 or nearest ten.

SSC CGL 25-Question Speed Strategy:

-Phase 1 (First 10 min):

Target 15 Direct/Formula/Zero-Pen Questions ($\leq 25s$ each)

-Phase 2 (Next 10 min):

Target 7 Arithmetic/Word Problems ($\leq 45s$ each)

-Phase 3 (Last 5 min):

Review & 3 Lengthy/Geometry calculation questions

THE 5-SECOND HANDBOOK

SSC CGL 2026 Quantitative Aptitude

Brand : Jhatpat Taiyari (@jhatpattaiyari)

Tagline : हर सवाल, सबसे तेज़ हल
(Every Question, Fastest Solution)

- ✓ • 50 Speed Tricks Mastered
- ✓ • 300+ PYQs Solved with Zero-Pen Methods
- ✓ • Formula-Free Elimination Across Arithmetic, Algebra, Geometry & Trigonometry
- ✓ • 100% Exam-Tested on Latest TCS Pattern



Follow & Connect with Jhatpat Taiyari:



Instagram : @jhatpattaiyari



YouTube : Jhatpat Taiyari



Daily Quiz & Free PDF Updates : Follow @jhatpattaiyari

“मेहनत इतनी खामोशी से करो कि
सफलता शोर मचा दे!”



Target SSC CGL 2026: 50/50 in Quantitative Aptitude!

© 2026 Jhatpat Taiyari. All rights reserved.