

8pm → Special Class. → Uncertainty.
↳ General Aptitude Solutions - GATE 2022



Doubt Clearing Session

Course on General Aptitude and Engineering Mathematics for GATE
2023-24

General Aptitude

PYQ'S on Quantitative Aptitude

- V

Question 1

A worker noticed that the hour hand on the factory clock had moved 225 degrees during her stay at the factory. For how long does she stay in the factory?

- A. 8.5 hours
- B. 7.5 hours
- C. 3.75 hours
- D. 4 hours and 15 minutes

Answer

- Option B)

Question 2

$$\frac{26}{26} \\ 4 \underline{(12+12)} \quad 36$$

(76)

The sum and product of two integers are 26 and 165 respectively. The difference between these two integers is _____.

- A. 2
- B. 6
- C. 3
- D. 4

$$x+y = 26$$

$$xy = 165$$

$$(x+y)^2 = (x-y)^2 + 4xy.$$

$$(x-y)^2 = (x+y)^2 - xy.$$

$$= (26)^2 - 4xy$$

$$= 676 - 4 \times 165 = 676 - 660 \\ = 16$$

$$(x-y)^2 = 16.$$

$$x-y = \sqrt{16}$$

$$x-y = 4$$

Answer

Option D)

$$\text{Area} = a^2$$

$$\text{Area} = l \times b$$

$$b=45$$

$$l=50$$

Question 3

Sides are equal

$$(l-10)$$

$$(b-5)$$

square.

A rectangle becomes a square when its length and breadth are reduced by 10m and 5 m respectively. During this process, the rectangle losses 650 m² of area. What is the area of the original rectangle in square meters?

A. 1125

$$A = \text{Area of the rectangle} = l \times b = 45 \times 50 = 2250$$

B. 2250

$$\text{Area of the } \square = (l-10) \times (b-5)$$

C. 2294

$$(l-10) \times (b-5) = A - 650$$

D. 4500

$$(l-10) \times (b-5) = (l \times b) - 650$$

$$(l-10) = (b-5)$$

$$l = b + 5$$

$$b = l - 5$$

$$(b-5) \times (b-5) = (b+5+b)$$

$$= (b-5)^2 = (2b+5) - 650$$

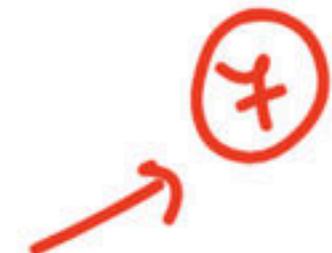
Answer

Option B)

JMDH Concept

Question 4

$$\frac{M_1 D_1 H_1}{W_1} = \frac{M_2 D_2 H_2}{W_2}$$



$$W_1 \quad \text{Time} = \frac{D}{E}$$

Seven machines take 7 minutes to make 7 identical toys. At the same time rate how many minutes would it take for 100 machines to make 100 toys?

A. 1

B. 7

C. 100

D. 700

$$\frac{M_1 H_1}{D_1} = \frac{M_2 H_2}{D_2}$$

$$\frac{7 \times 7}{7} = \frac{100 \times t_2}{100}$$

$$t_2 = 7$$

Answer

Option B)

$$D = S \times T$$

$$L_1 = S \times T$$

$$L_T + L_p = S \times T \rightarrow ①$$

Question 5


$$L_1 = S \times T \rightarrow ②$$

Speed =

$$l = l_p.$$



$$S_p = S_1 + S_2$$

$$S_p = S_1 - S_2$$

From the time the front of a train enters a platform, it takes 25 sec for the back of the train to leave the platform, while train travelling at a constant speed of 54 km/h. At the same speed, it takes 14 sec to pass a man running at 9 km/h in the same direction as the train. What is the length of the train and that of the platform in meters respectively?

$$S_p = S_1 - S_2 = 54 - 9 = 45 \text{ m/h}$$

A. 210 and 140

B. 162.5 and 187.5

C. 245 and 130

D. 175 and 200

$$L_T = S \times T$$

$$L_T = \frac{5}{18} \times \frac{5}{18} \times 14$$

$$L_T = 175 \text{ m}$$

$$L_T + L_p = S \times T$$

$$175 + L_p = \frac{5}{18} \times \frac{5}{18} \times 25$$

$$175 + L_p = 375.$$

$$L_p = 375 - 175$$

$$= 200 \text{ m.}$$

S.I Unit of Speed = m/s .

$$\text{km/h} = \frac{1\text{km}}{1\text{hr}} = \frac{1000\text{m}}{1\text{hr}}$$

$$1\text{hr} = 60\text{min} \times 60\text{s} = 3600\text{s}$$

$$\frac{1000}{3600} = \frac{10}{36} = \frac{5}{18}$$

$$\frac{5}{18}\text{ km/s}$$

Answer

- Option D)

T-1 Out

$$10A + B$$

$$10B + A$$

$$x+y =$$

$$\begin{aligned} 10A + B &= 9 \\ (10A + B) - 45 &= 10B + A \end{aligned}$$

$$x+y=9$$

(i)

(ii)

A number consists of two digits, the sum of digits is 9. If 45 is subtracted from the number, its digits are interchanged. What is the number?

A. 63 - 45 = 36 ✗

$$1(A-B) = 45 - 5$$

✓ B. 72 - 45 = 27 ✓

C. 81 - 45 = 36 ✓

D. 90 - 45 = 45 ✓

1	6
2	7
3	8
4	9

$$(A-B) = 5$$

16	61
27	72
38	83
49	94

- x (i)
x (ii)
x (iii)
x (iv)

Answer

- Option B)

$$\text{Male} + \text{Female} = 300$$

↓ ? ↓ ?

Question 7

In appreciation of the social improvements completed in a town, a wealthy philanthropist decided to gift Rs750 to each male senior citizen in the town and Rs1000 to each female senior citizen. Altogether, there were 300 senior citizens eligible for this gift. However, only $\frac{8}{9}$ of the eligible men and $\frac{2}{3}$ of the eligible women claimed the gift. How much money (in Rupees) did the philanthropist give away in total?

A. 1,50,000

B. 2,00,000

C. 1,75,000

D. 1,51,000

$$\begin{aligned}
 & \frac{8}{9} \times 750 = \frac{6000}{9} = \boxed{\frac{2000}{3} M + \frac{2000}{3} F} = \text{Money} \\
 & \frac{2000}{3} [300] = 2,00,000
 \end{aligned}$$

$$\left[\frac{8}{9} \times 750 + \frac{2}{3} \times 1000 \right] \times 300 =$$

$$\frac{2000}{3} \times 300 = 2,001,000$$

Answer

- Option B)

Question 8

$$P = \left\lceil \frac{x+y}{2} \right\rceil$$

Single Style .

The product of three integers X, Y and Z is 192. Z equal to 4 and P is equal to the average of X and Y. What is the minimum possible value of P?

A. 8

$$x \times y \times z = 192$$

B. 7

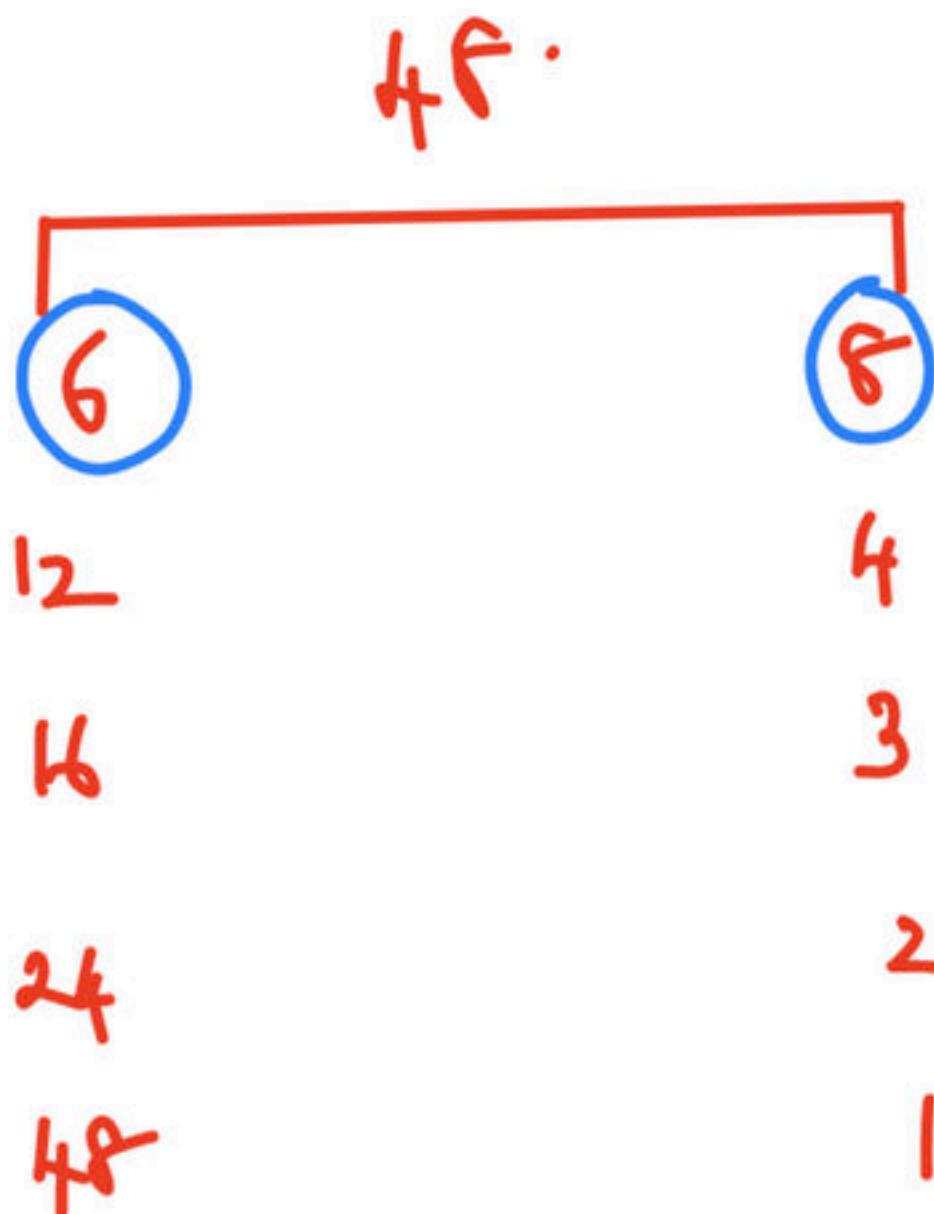
$$x \times y = 192$$

C. 9.5

$$xy = \frac{192}{4}$$

D. 6

$$xy = 48$$



$$P = \frac{6+8}{2}$$

$$= \frac{14}{2}$$

$$= 7$$

Answer

- Option B)

$$\begin{array}{c} 100\% \downarrow \\ 100\% \downarrow \\ 4\% \quad 5.5\% \\ \hline = \quad = \end{array}$$

$$110 \times \frac{5}{100} = \frac{55}{100}$$

Question 9

Assume the 1st = 100%.

Fiscal deficit was 4% of the GDP in 2015, and that increased to 5% in 2016. If the GDP increased by 10% from 2015 to 2016, then percentage increase in the actual fiscal deficit is _____.

A. 25.00

$$F.D = 4\% \text{ of GDP (2015)}$$

B. 35.70

$$F.D = 5\% \text{ of GDP (2016)}$$

C. 10.00

D. 37.50

$$\frac{5.5 - 4}{4} \times 100$$

$$= \frac{1.5}{4} \times 100$$

$$= \frac{150}{4} = 37.5\%$$

Answer

Option D)

$$P = \frac{1}{6}$$

$$R = \frac{1}{12}$$

$$Q = \frac{1}{9}$$

(F)

Question 10

$$\begin{array}{c} 3 \\ | \\ 6, 9, 12 \\ | \\ 2 \\ | \\ 2, 3, 4 \\ | \\ 1, 3, 2 \end{array}$$

Two pipes P and Q can ~~fill~~⁺ a tank in 6 hours and 9 hours respectively, while a third pipe R can ~~empty~~⁻ the tank in 12 hours. Initially, P and R are open for 4 hours. Then P is closed and Q is opened. After 6 more hours R is closed. The total time taken to fill the tank (in hours) is ____.

A. 16.50

B. 15.50

C. 14.50

D. 13.50

$$P+Q-R = \frac{1}{6} + \frac{1}{9} - \frac{1}{12}$$

$$P-R = \frac{1}{6} - \frac{1}{12}$$

$$Q-R = \frac{1}{9} - \frac{1}{12}$$

$4+6=10$
 $= 14.5$

$$Q = \frac{1}{9}$$

LCM Approach.

Efficiency.

T.W.

$$6 \leftarrow P \xrightarrow{+} 6$$

$$4 \leftarrow Q \xrightarrow{+} 9$$

$$3 \leftarrow R \xrightarrow{-} 12$$

36

$$(P-R) \times 4 + (Q-R) \times 6 + Q = 36$$

$$3 \times 4 + 1 \times 6 + Q = 36$$

$$12 + 6 + Q = 36 \Rightarrow Q = 18$$

$$x = 18/4 = 4.5$$

Answer

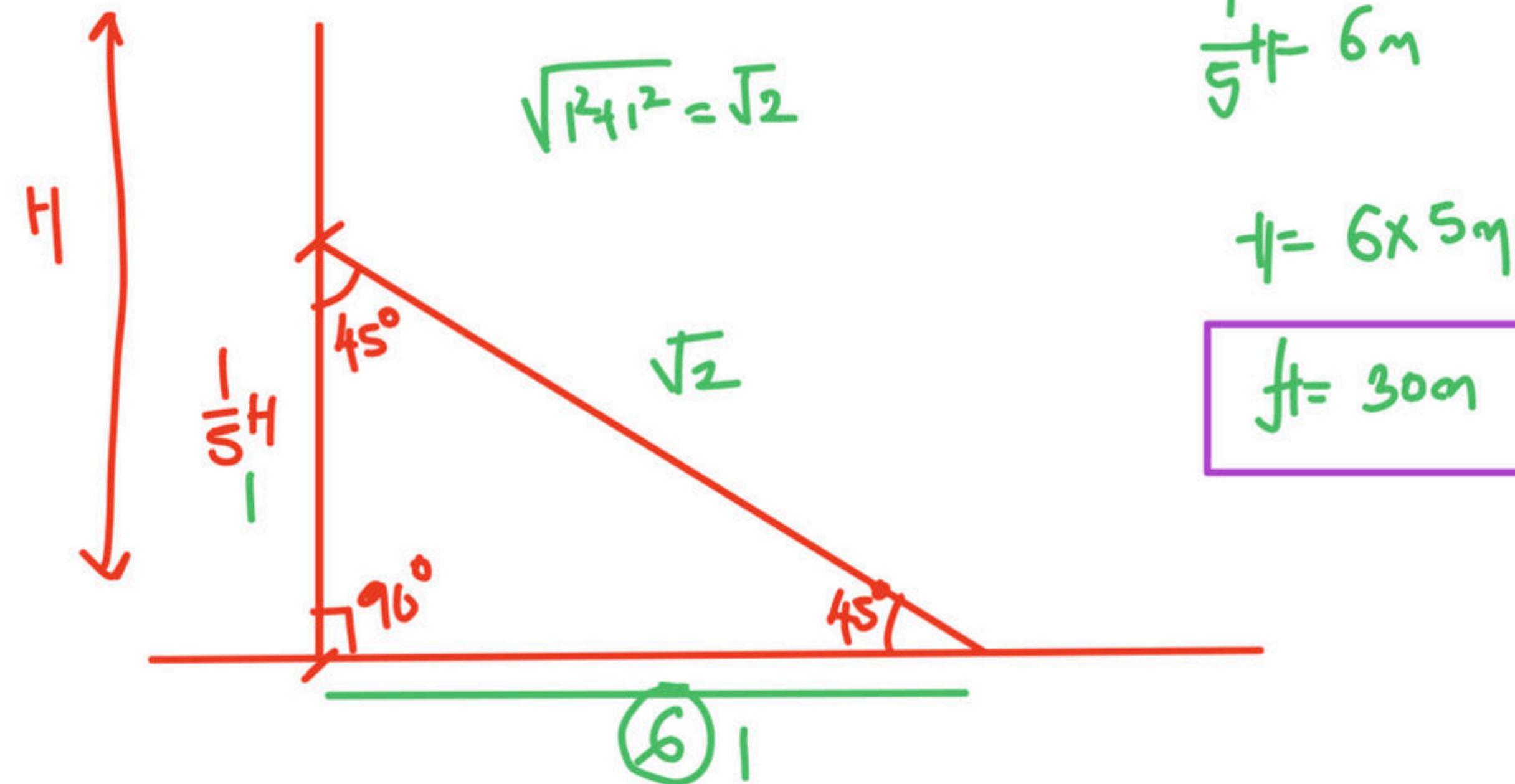
- Option C)

Question 11

$$\tan 45^\circ = 1$$

A ladder rests on the floor at a distance of 6m from vertical pole and make angle of 45 degrees with horizontal. If the upper end of the ladder is at one fifth of the height of pole from bottom then height of pole is:

- A. 15 m
- B. 25 m
- C. 30 m
- D. 35 m



Answer

- Option C)

$x = \text{larger } \square^{\text{side}}$

$y = \text{smaller } \square^{\text{side}}$

Question 12

$$y = 10 - s$$

s = 5 ✓

If side of a small square is 5 cm less than the larger one and area of larger square is 4 times area of small square, then what is the side of large square?

- A. 10 cm
- B. 8 cm
- C. 15 cm
- D. 20 cm

$$y = x - 5 \rightarrow ①$$

$$x^2 = 4y^2 \rightarrow ②$$

$$x^2 = 4(x-5)^2$$

$$x^2 = 4(x^2 - 10x + 25)$$

$$x^2 = 4x^2 - 40x + 100$$

$$3x^2 - 40x + 100 = 0.$$

$$3x^2 - 30x - 10x + 100 = 0.$$

$$3x(x-10) - 10(x-10)$$

$$x=10, 1$$

$$x = 10/3$$

$$100 = 4x(s)^2$$

$$100 = 4 \times 25 \checkmark$$

General Aptitude

General Aptitude Revision Series | Data Interpretation - I



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28 lessons

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Jan 11 - 17 • 6 lessons

JAN
11 English Language - Sentence Correction
Lesson 1 • 7:00 PM

JAN
12 English Language - Word Substitution
Lesson 2 • 7:00 PM

JAN
13 English Language - Vocabulary
Lesson 3 • 7:00 PM

JAN
14 Doubt Clearing Session
Lesson 4 • 7:00 PM

JAN
15 Numerical Ability - Ratio and Proportion
Lesson 5 • 7:00 PM

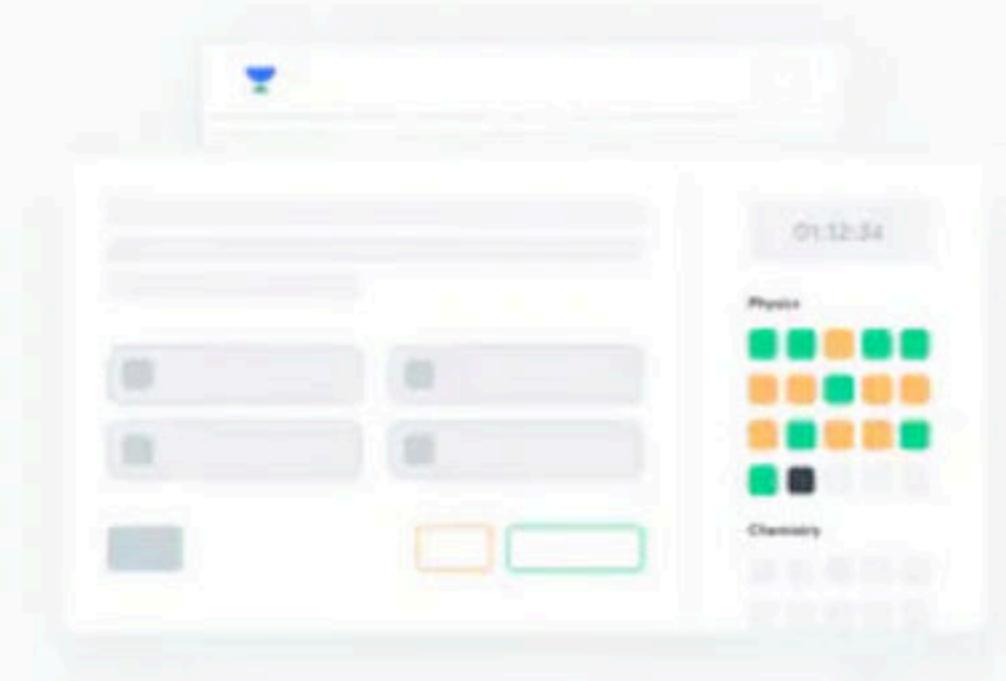
JAN
16 Numerical Ability - Mixtures and Alligations
Lesson 6 • 7:00 PM

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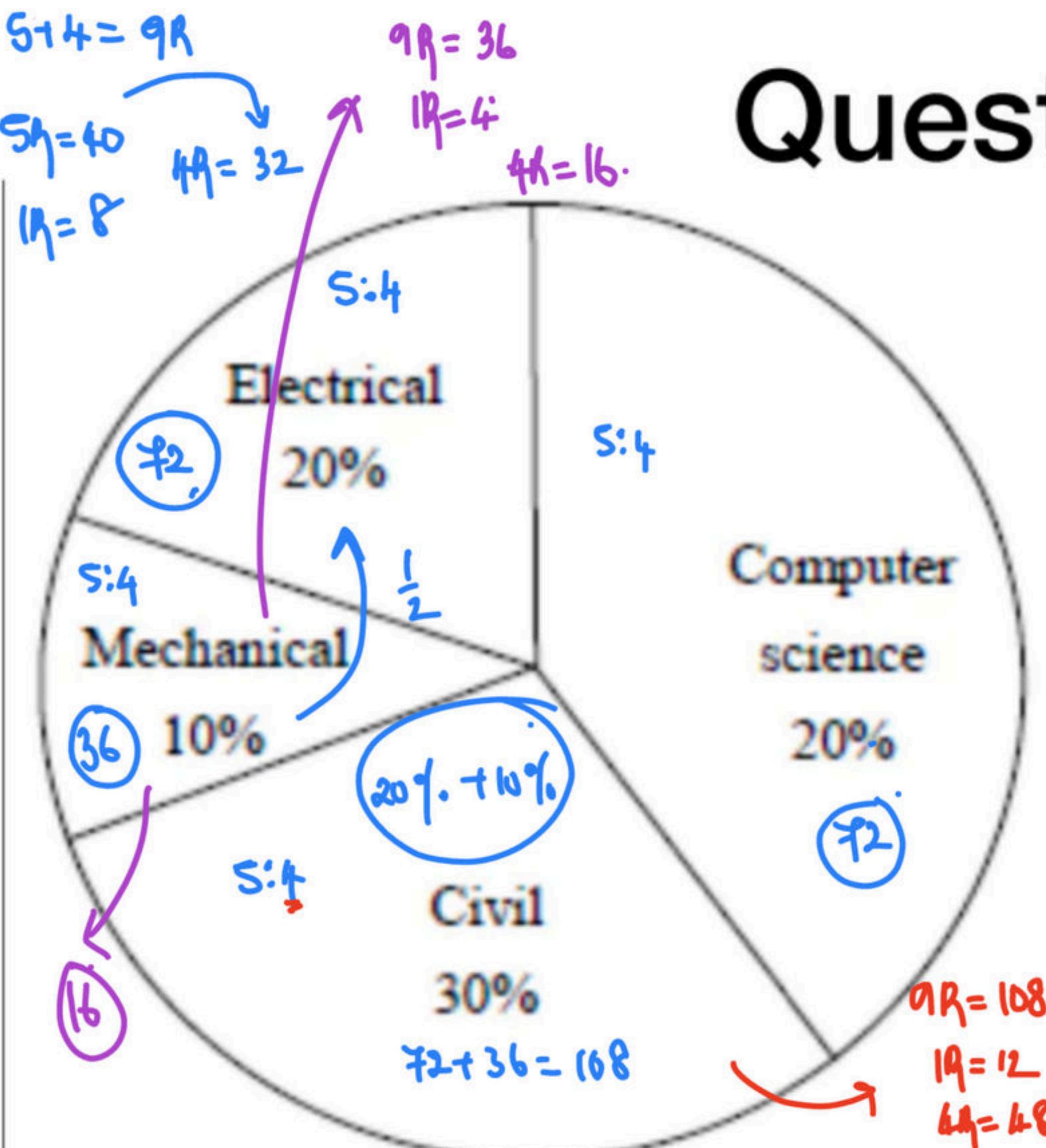
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Question 1



$R = \text{Ratio}$

The pie chart below has the breakup of the number of students from different departments in an engineering college for the year 2012. The proportion of male to female students in each department is 5:4. There are 40 males in Electrical Engineering. What is the difference between numbers of female students in the Civil department and the female students in the Mechanical department?

$$\text{Female (Civil)} - \text{Female (Mech)}$$

- A) 28. B) 40. C) 32 D) 54

$$= 48 - 16 = 32$$

$$\text{Average} = \frac{\text{Sum}}{n}$$

Question 2

$$\eta = 44$$

The number of students in a class who have answered correctly, wrongly, or not attempted each question in an exam, are listed in the table below. The marks for each question are also listed. There is no negative or partial marking. What is the average marks obtained by the class in the examination?

- A) 2.290 B) 2.970 C) 6.795. D) 8.975

$$\text{No. of Students.} = \frac{21 \times 2 + 15 \times 3 + 11 \times 1 + 23 \times 2 + 31 \times 5}{44}$$

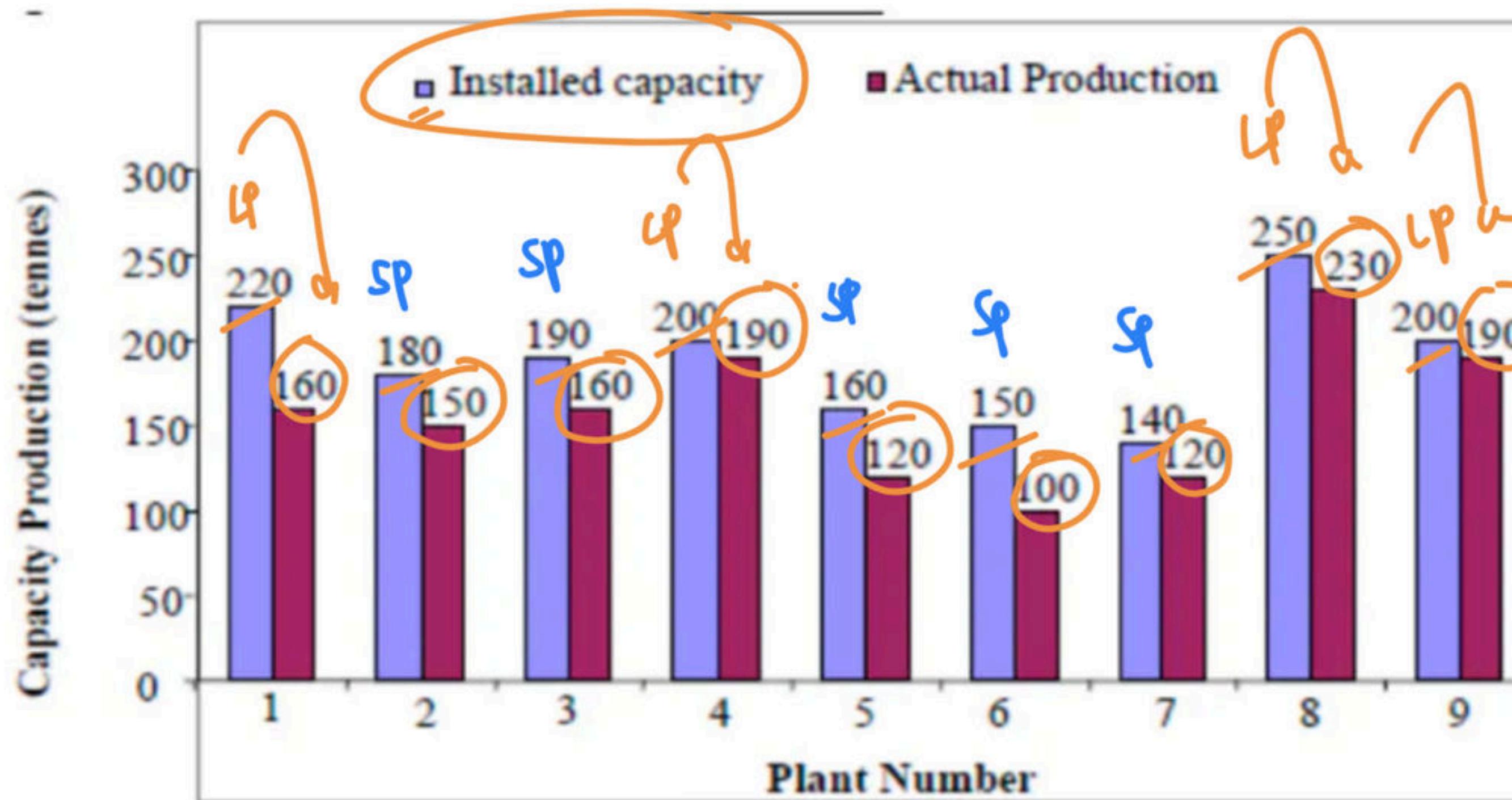
Q No.	Marks	Answered Correctly	Answered Wrongly	Not Attempted
1	2	21	17	6
2	3	15	27	2
3	1	11	29	4
4	2	23	18	3
5	5	31	12	1

$$= \frac{42 + 45 + 11 + 46 + 155}{44}$$

$$= \frac{299}{44} = \frac{360}{45} = \frac{60}{9} = 6.5 \approx 6.4$$

The following graph represents the installed capacity for cement production (in tonnes) and the actual production (in tonnes) of nine cement plants of a cement company. Capacity utilisation of a plant is defined as ratio of actual production of cement to installed capacity. A plant with installed capacity of at least 200 tonnes is called a large plant and a plant with lesser capacity is called a small plant. The difference between [total production] of large plants and small plants, in tonnes is _____

- A. 120 B. 170 C. 165 D. 140



$$\begin{aligned}
 I_p &= 160 + 190 + 230 + 190 \\
 &= 770.
 \end{aligned}$$

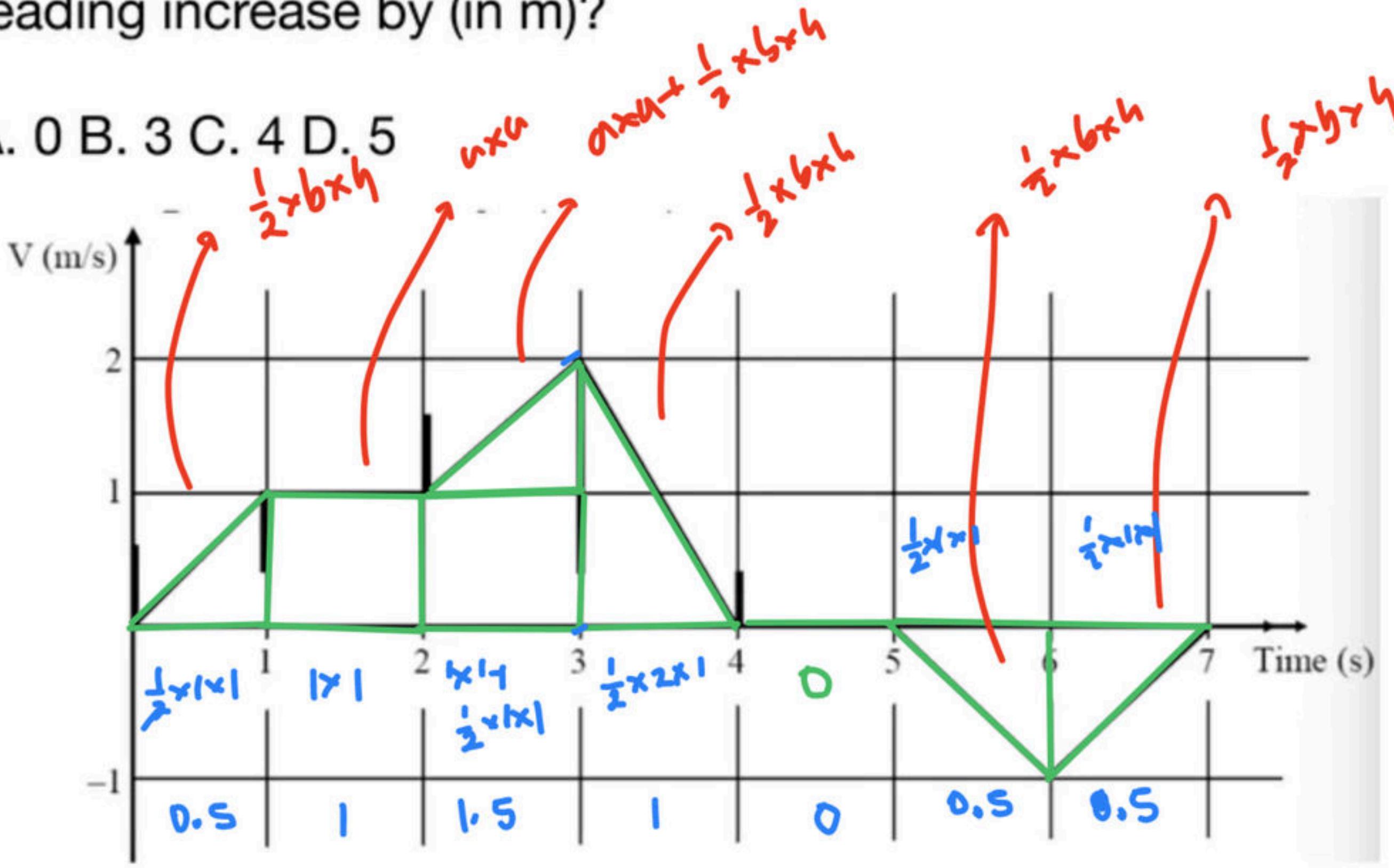
Question 3

$$\begin{aligned}
 Sp &= 150 + 160 + 120 + 100 + 120 \\
 &= 650. \\
 (770 - 650) &= 120
 \end{aligned}$$

Question 4

The velocity V of a vehicle along a straight line is measured in m/s and plotted as shown with respect to time in seconds. At the end of the 7 seconds, how much will the odometer reading increase by (in m)?

- A. 0 B. 3 C. 4 D. 5



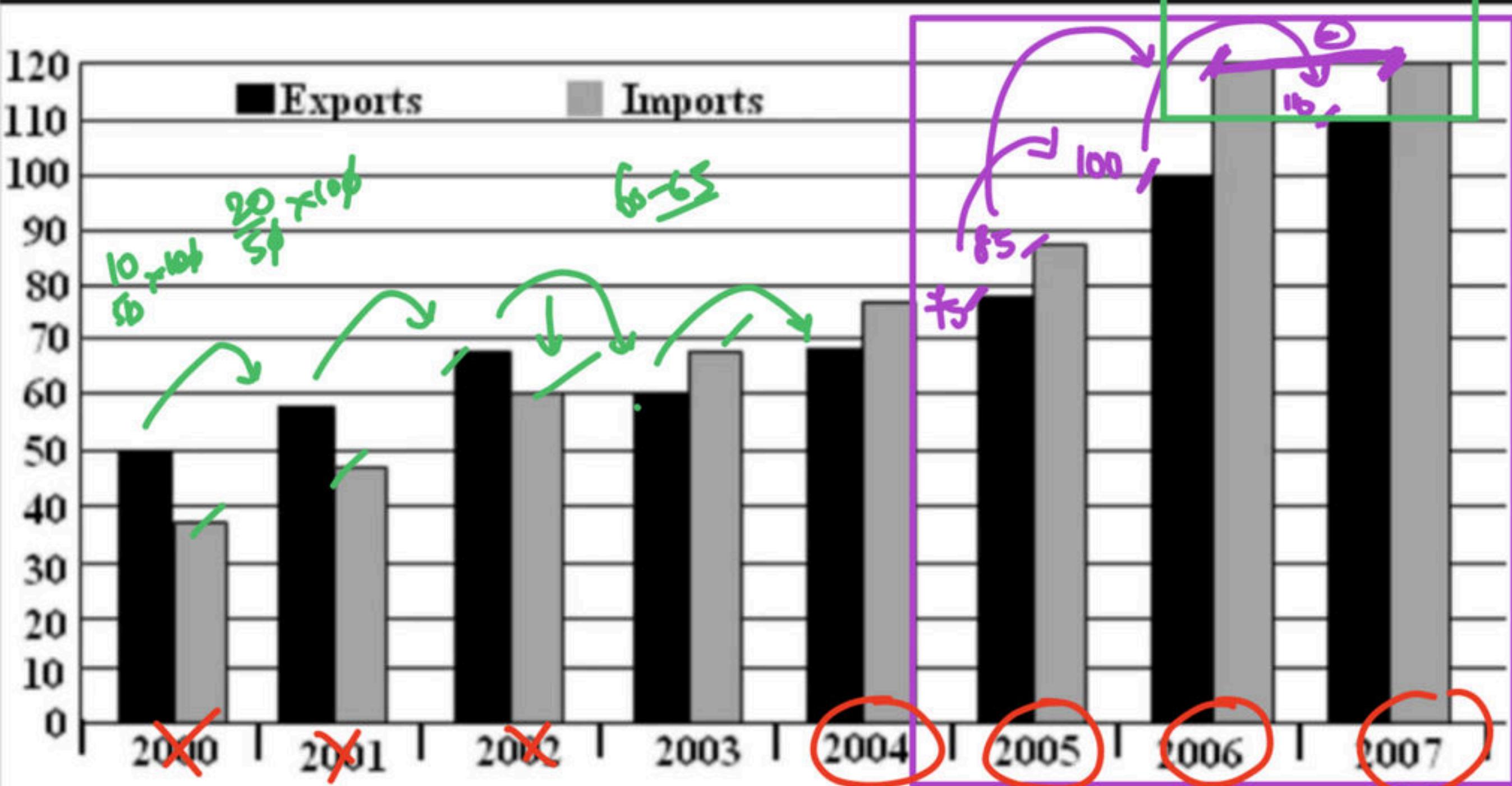
$$\begin{aligned}&= 0.5 + 1 + 1.5 + 0.5 + 0.5 + 1 \\&= 5\end{aligned}$$

Question 5

Sum of imports + exports ↑

The exports and imports (in crores of Rs.) of a country from the year 2000 to 2007 are given in the following bar chart. In which year is the combined percentage increase in imports and exports the highest?

- A) 2007 B) 2006 C) 2005 D) 2004



$$\frac{25}{70} \times 100 = \frac{250}{7} = 35.7\%$$

$$2007 = \frac{10}{100} \times 100 = 10\%.$$

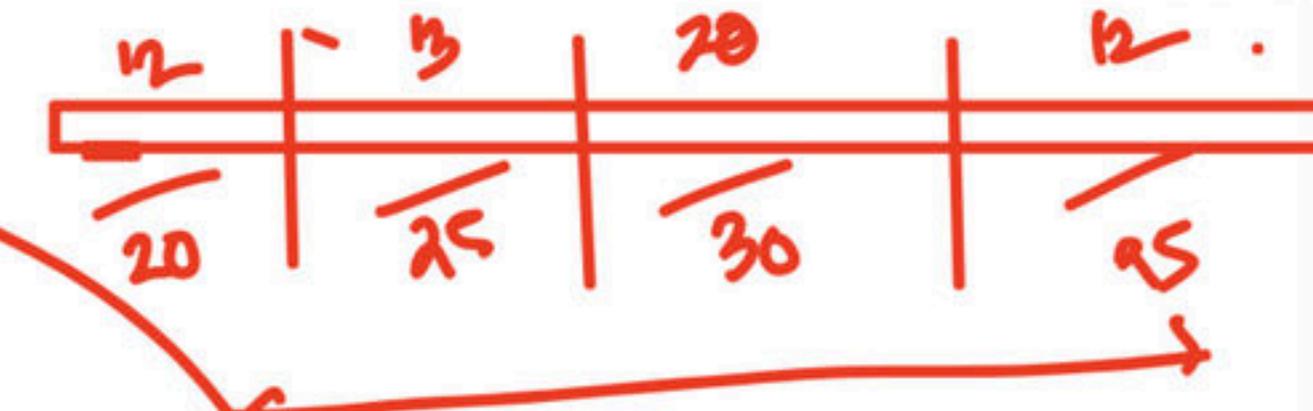
$$\frac{33}{85} \times 100 = \frac{330}{85} = 38.2\%$$

$$2006 = \frac{25+35}{100+85} = \frac{60}{185} \times 100 = \frac{60}{37} \times 20 = 32.4\%$$

$$2001 = \frac{10+0}{10+120} = \frac{10}{130} \times 100 = \frac{100}{13} = 5\%$$

Corresponding Velocity
50 kmph) 10
60 kmph) 8
70 kmph) 6

Question 6



An electric bus has onboard instruments that report the total electricity consumed since the start of the trip, as well as the total distance, covered. During a single day of operation, the bus travels on stretches M, N, O, and P, in that order. The **cumulative distances** travelled and the **corresponding electricity consumption** are shown in the Table below. The stretch where the electricity consumption per km is minimum is:

- A) M B) N C) O D) P

Total

per km

Stretch	Cumulative distance (km)	Electricity used (kWh)	
M	20	12	$0.6 = \frac{6}{10} = \frac{3}{5}$
N	45	25	$0.5 = \frac{13}{25}$
O	75	45	$66.66 = \frac{2}{3} = \frac{20}{30}$
P	100	57	$> 0.5 = \frac{12}{25}$

Total = 300

Question 7

In a survey, 300 respondents were asked whether they own a vehicle or not. If yes, they were further asked to mention whether they own a car or scooter or both. Their responses are tabulated below. What percent of respondents do not own a scooter?

- A) 64% B) 50% C) 48% D) 38%

$$Men = 40 + 20 = 60$$

		Men	Women
Own vehicle	Car	40	34
Own vehicle	Scooter	30	20
Own vehicle	Both	60	46
Do not own vehicle		20	50

$$Women = 34 + 50 = 84$$

$$60 + 84 = 144$$

$$\frac{144}{300} \times 100 = \frac{48}{3} = 48\%$$

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See you in the next session :)

Answer

- Option A)



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Updates

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Sep 21 - 27 • 5 lessons

SEP Translation of an Image - Part I

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SEP Translation of an Image - Part III

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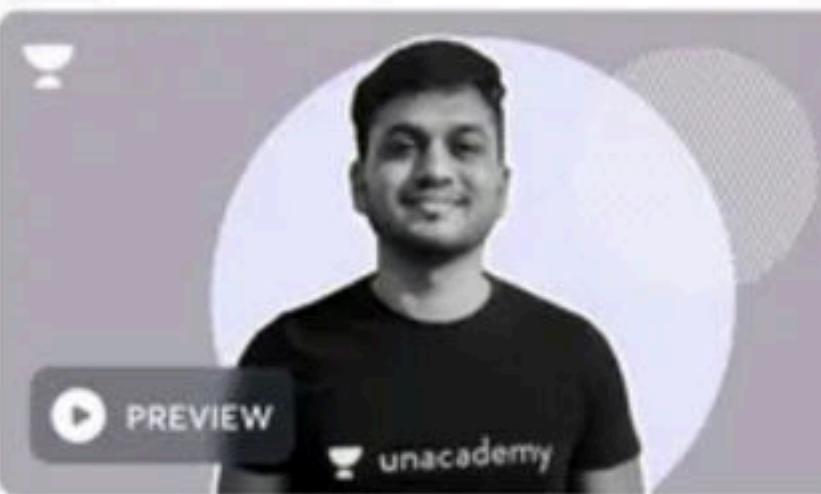


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SEP Introduction to Laplace Transforms

21 Lesson 1 • 2:00 PM

SEP Theorems of Laplace Transforms - Part I

22 Lesson 2 • 2:00 PM

SEP Theorems of Laplace Transforms - Part II

23 Lesson 3 • 2:00 PM



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