RBI Assistant Mains 2020 Quantitative Aptitude Memory Based

Q.1 Train A 180 m long overtakes another train B (x meter long) in 20 sec. find the value of x.
I. Train B starts from station R at 9.00 a.m. and reach 360 km far station S at 1:00 pm without any stoppage.
II. Train A cross a platform of 240 m long in 8.4 sec.
The following questions are accompanied by two statements (I) and (II). You have to determine which statements(s) is/are sufficient/necessary to answer the questions.

A. Neither statement **(I)** or statement **(II)** by itself is sufficient to answer the question.
B. Statement **(II)** alone is sufficient to answer the question but statement **(I)** alone is not sufficient to answer the question.
C. Either statement **(I)** or statement **(II)** by itself is sufficient to answer the question.
D. Both the statements taken together are necessary to answer the questions, but neither of the statements alone is sufficient to answer the question.
E. Statement **(I)** alone is sufficient to answer the question but statement **(II)** alone is not sufficient to answer the questions

Answer: D

Sol:

Train A 180 m long overtakes another train B (x meter long) in 20 sec
Speed of train A = S_A , Speed of train B = S_B
$\frac{180+x}{S_A-S_B} = 20$
Statement I. We get speed of train B
Total time taken by train B = 4 hours
Speed of train B = $\frac{360}{4} = 90\ km/h$
Speed of train B change into m/sec = $90 \times \frac{5}{18} = 25m/sec$
Statement II. We get speed of train A
$\frac{240+180}{S_A} = 8.4$
$S_A = 50\ m/sec$
Therefore, from statements (I) & (II) together we can determine the answer of the question

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Q.2 Find the annual income of Anuja?
I. Anuja deposit Rs. 10,000 per month in her PF account. Ratio of amount deposit in PF and Expenses for her household is 2:3. Rest part of income she saved with her.
II. Her monthly saving is Rs. 8,000.
The following questions are accompanied by two statements (I) and (II). You have to determine which statements(s) is/are sufficient/necessary to answer the questions.

A. Neither statement **(I)** or statement **(II)** by itself is sufficient to answer the question.
B. Statement **(II)** alone is sufficient to answer the question but statement **(I)** alone is not sufficient to answer the question.
C. Either statement **(I)** or statement **(II)** by itself is sufficient to answer the question.
D. Both the statements taken together are necessary to answer the questions, but neither of the statements alone is sufficient to answer the question.
E. Statement **(I)** alone is sufficient to answer the question but statement **(II)** alone is not sufficient to answer the questions

Answer: D

Sol:

Income = expenses + saving
Statements I.
Ratio of amount deposit in PF and Expenses for her household is 2u:3u
2u =10,000
3u = $\frac{10,000}{2} \times 3 = Rs.\ 15,000$
Statements II.
Monthly saving is Rs. 8,000.
So, statements (I) & (II) together we can determine the answer of the question

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Q.3 What is the age of A?
I. ratio of present ages of A and B is 4:5 after 5 years.
II. Sum of the present ages of B and C is 56 years. C will be thrice of the ages of A after 3 years.
The following questions are accompanied by two statements (I) and (II). You have to determine which statements(s) is/are sufficient/necessary to

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answer the questions.

A. Neither statement **(I)** or statement **(II)** by itself is sufficient to answer the question.
B. Statement **(II)** alone is sufficient to answer the question but statement **(I)** alone is not sufficient to answer the question.
C. Either statement **(I)** or statement **(II)** by itself is sufficient to answer the question.
D. Both the statements taken together are necessary to answer the questions, but neither of the statements alone is sufficient to answer the question.
E. Statement **(I)** alone is sufficient to answer the question but statement **(II)** alone is not sufficient to answer the questions

Answer: E

Sol:

Statements I.
Ratio of A: B = 4:5
Statements II.
B+C = 56
Neither statement **(I)** nor statement **(II)** by itself is sufficient to answer the question

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Q.4 **If a and b are integers, then what is the average value of a' and b'?**

I. $\frac{a}{b}+\frac{b}{a}=a+b$

II. $\frac{a}{b}+\frac{b}{a}=a^2+b^2$

The following questions are accompanied by two statements (I) and (II). You have to determine which statements(s) is/are sufficient/necessary to answer the questions.

A. Neither statement **(I)** or statement **(II)** by itself is sufficient to answer the question.
B. Statement **(II)** alone is sufficient to answer the question but statement **(I)** alone is not sufficient to answer the question.
C. Either statement **(I)** or statement **(II)** by itself is sufficient to answer the question.
D. Both the statements taken together are necessary to answer the questions, but neither of the statements alone is sufficient to answer the question.
E. Statement **(I)** alone is sufficient to answer the question but statement **(II)** alone is not sufficient to answer the questions

Answer: E

Sol:

I. $\frac{a}{b}+\frac{b}{a}=a+b$
Since 'a' and 'b' are integers
Therefore only a=b=1 satisfy the above eq.
Average $=\frac{1+1}{2}=1$
So, statement I alone is sufficient to answer the question
II. $\frac{a}{b}+\frac{b}{a}=a^2+b^2$
$\frac{a^2+b^2}{ab}=a^2+b^2$
ab = 1
Therefore both a=b=1 and a=b=-1
satisfy the above equation
$\frac{1+1}{2}=1;\frac{-1-1}{2}=-1$
So, statement II alone is not sufficient to answer the question
So, statement I alone is sufficient to answer the question

Q.5 **A mixture of plant fertilizer consists of nitrogen, phosphoric acid and potash. What is the number of grams of potash in the mixture?**
I. By weight, the ratio of nitrogen to potash is 2:3
II. By weight, the ratio of phosphoric acid to potash is 4:3 and 1/3rd of weight of the mixture is potash.
The following questions are accompanied by two statements (I) and (II). You have to determine which statements(s) is/are sufficient/necessary to answer the questions.

A. Neither statement **(I)** or statement **(II)** by itself is sufficient to answer the question.
B. Statement **(II)** alone is sufficient to answer the question but statement **(I)** alone is not sufficient to answer the question.
C. Either statement **(I)** or statement **(II)** by itself is sufficient to answer the question.
D. Both the statements taken together are necessary to answer the questions, but neither of the statements alone is sufficient to answer the question.
E. Statement **(I)** alone is sufficient to answer the question but statement **(II)** alone is not sufficient to answer the questions

Answer: A

Sol:

Since the total weight of the mixture is not given the question can't be answered.
So, neither statement **(I)** nor statement **(II)** by itself is sufficient to answer the question

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Q.6 **Average selling price of article II for Store A, B and C is Rs 441. If cost price of article II for Store C is also same as Store A and B, then find the loss% of Store C after selling Article II?**
The table given below shows the data regarding four different articles sold by two different shops A and B. Study the data carefully and answer the questions that follow.

Article	Cost of article	Profit% of store A	Profit% of store B
Article I	200	23%	13.6%
Article II	420	20%	35%
Article III	480	24%	5%
Article IV	320	10%	20%

A. 44%
B. 32%
C. 25%
D. 40%
E. 55%

Answer: D

Sol:

Total SP of Article-II for shops A, B and C = 441×3 = Rs. 1323
Profit on Article-II for store A and B = (20+35) = 55% of 420 = Rs. 231
Therefore SP of article-II for store A and B = 231+840 = Rs. 1071
So SP of Article-II for store C = 1323-1071 = Rs. 252
and CP = Rs. 420
Required loss% = $\frac{168}{420} \times 100 = 40\%$

Q.7 **If mark price labeled on Article I for Store A and Store B is 64% and 42% above its Cost Price, then find the difference between discount offered by store A and Store B.**
The table given below shows the data regarding four different articles sold by two different shops A and B. Study the data carefully and answer the questions that follow.

Article	Cost of article	Profit% of store A	Profit% of store B
Article I	200	23%	13.6%
Article II	420	20%	35%
Article III	480	24%	5%
Article IV	320	10%	20%

A. Rs. 11.6
B. Rs. 19.6
C. Rs. 27.8
D. Rs. 21.4
E. Rs.25.2

Answer: E

Sol:

Mp_A on article-I = 1.64×200 = Rs. 328
Sp_A = 1.23×200 = Rs. 246
Discount by A = 328 − 246 = Rs. 82
Mp_B on article-I = 1.42×200 = Rs. 284
Sp_B = 113.6% of 200 = Rs. 227.2
Discount by B = 284 − 227.2 = Rs. 56.8
Required difference = 82 − 56.8 = Rs. 25.2

Q.8 Cost Price of article V is 25% more than that of article IV. If ratio of selling price of article V sold by store B and selling price of article IV by same store is 21: 16, then find profit% of store B by selling article V?
The table given below shows the data regarding four different articles sold by two different shops A and B. Study the data carefully and answer the questions that follow.

Article	Cost of article	Profit% of store A	Profit% of store B
Article I	200	23%	13.6%
Article II	420	20%	35%
Article III	480	24%	5%
Article IV	320	10%	20%

A. 11%
B. 19%
C. 26%
D. 21%
E. 29%

Answer: C

Sol:

CP of article V = 1.25×320 = 400
Selling price of article IV by store B $= 320 \times \frac{6}{5} = Rs.384$
Sp_B of Article V : Sp_B of article IV
21 : 16
? : 384
? = 24 × 21 = 504
Required Profit % = $\frac{104}{400} \times 100 = 26\%$

Q.9 Selling price of article III sold by store A is approx. what percent more than same article sold by store B?
The table given below shows the data regarding four different articles sold by two different shops A and B. Study the data carefully and answer the questions that follow.

Article	Cost of article	Profit% of store A	Profit% of store B
Article I	200	23%	13.6%
Article II	420	20%	35%
Article III	480	24%	5%
Article IV	320	10%	20%

A. 21%
B. 18%
C. 16%
D. 11%
E. 9%

Answer: B

Sol:

Selling price of article III for store A $= 480 \times \frac{124}{100} = Rs.595.2$
Selling price of article III for store B $= 480 \times \frac{105}{100} = Rs.504$
So, required % $= \frac{595.2-504}{504} \times 100$
$\approx 18\%$

Q.10 Selling price of article III for store A is what % less than selling price of article IV for store B (approx.)?
The table given below shows the data regarding four different articles sold by two different shops A and B. Study the data carefully and answer the questions that follow.

Article	Cost of article	Profit% of store A	Profit% of store B
Article I	200	23%	13.6%
Article II	420	20%	35%
Article III	480	24%	5%
Article IV	320	10%	20%

A. 14%
B. 46%
C. 35%
D. 71%
E. 28%

Answer: C

Sol:

Selling price of article III for store A $= 480 \times \frac{124}{100} = Rs.595.2$

Selling price of article IV for store B $= 320 \times \frac{120}{100} = Rs.384$

So, req. % $= \frac{211.2}{595.2} \times 100 = 35\%$

Q.11 What is the ratio between cost price of article II for store A and selling price of article I for store B?
The table given below shows the data regarding four different articles sold by two different shops A and B. Study the data carefully and answer the questions that follow.

Article	Cost of article	Profit% of store A	Profit% of store B
Article I	200	23%	13.6%
Article II	420	20%	35%
Article III	480	24%	5%
Article IV	320	10%	20%

A. None of these
B. 229:319
C. 316:229
D. 284:525
E. 525:284

Answer: E

Sol:

Selling price of article I for store B $= 200 \times \frac{113.6}{100} = Rs.227.2$

So, required ratio = 420:227.2
= 525:284

Q.12 Ratio between 40% of (A+40) and 1.6 of B is 5:6. If difference between A and B is twice of B, then find the value of 1.3A + 2.4B. (Value of A is greater than value of B)

A. 756
B. 744
C. 876
D. 836
E. 916

Answer: A

Sol:

Difference between A and B is twice of B.
A-B=2B
A=3B.....(i)
According to ques
$\frac{40\%(A+40)}{1.6\times B}=\frac{5}{6}$
$\frac{40\%(3B+40)}{1.6\times B}=\frac{5}{6}$ (From (i))
B=120
A=3B, A=3× 120 = 360
= 1.3A + 2.4B = 1.3× 360 + 2.4 × 120 = 756

Q.13 8 year ago, ratio of age of A and B is 5:1. After 10-year, sum of the age of A, B, and C will be 102 years. Ratio of present of B and C is 2:1. Find the present age of A?

A. 44 years
B. 46 years
C. 48 years
D. 40 years
E. 42 years

Answer: C

Sol:

Let present of B and C be 2x and 1x respectively.
ATQ
8 year ago, ratio of age of A and B is 5:1
$\frac{A}{B}=\frac{5}{1}=\frac{A}{2x-8}$
A = 10x−40
A's present age
A = 10x−40 + 8 = 10x − 32
Sum of the age of A+B+C = 102 years (after 10 years)
Sum of present age of A+B+C=102-30=72 Years
= 10x − 32 + 2x + 1x = 72
= 13x−32 = 72
= 13x = 104
x = 8
Present age of A =10x − 32 = 10 × 8 − 32 = 48 years

Q.14 Cost price of article B is 40% more than cost price of article A. If article A is sold at Rs.351 there is X% profit and if it is sold for Rs. 312 then there is profit of (X-15)%. Find the selling price of article B if it is sold at 25% loss?

A. Rs.256
B. Rs.273
C. Rs.280
D. Rs.265
E. Rs.279

Answer: B

Sol:

Let the C.P of A = 100%
Difference between the profits
15% = 39 (351-312)
100% = $\frac{39}{15}\times 100 = 260$ = Rs 260
Ratio of cost price of A : B
= 5:7
= C.P. of B = $\frac{260}{5}\times 7 = 364$ = Rs 364
Selling price of article B when it is sold for 25% loss
$364\times\frac{75}{100}=273$ = Rs.273

Q.15 Ratio of work done by X men and (X-3) men is 5:8. Find (X+6) men can finish what fraction of work in 3 days?

A. 1/5
B. 2/5
C. 3/5
D. 4/5
E. can't determined

Answer: E

Sol:

No data provided above time so, we can't determine the answer of the question

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Q.16 B invest Rs. 4,000 more than that of A in a business. After 8 months B left the business and that time C joined A with thrice of investment as compare to A. If at the end of the year profit share of B is 2/5th of total profit, then find the investment of C?

A. Rs.17,200
B. Rs. 8,000
C. Rs. 12,000
D. Rs. 6,500
E. Rs. 15,500

Answer: C

Sol:

Let A invests Rs. X.
Ratio of share of profit for A,B and C
$= X \times 12 : (X + 4000) \times 8 : 3X \times 4$
= 3X: 2X+8,000: 3X
Profit share of B is $2/5^{th}$ of total profit.
$\frac{2X + 8{,}000}{8X + 8000} = \frac{2}{5}$
X=4,000
Investment of C = 3X= $3 \times 4{,}000 = Rs.\ 12{,}000$

Q.17 A train 480 m long crosses a platform half of its length in 36 sec. In what time it will cross a platform, which is twice of its length with 75% of earlier speed.

A. 1 min 36 sec
B. 1 min 18 sec
C. 1 min 45 sec
D. 1 min 55 sec
E. 1 min 20 sec

Answer: A

Sol:

Length of platform = 240 m
Let speed of train = s
$time = \frac{distance}{speed}$
$36 = \frac{480+240}{s}$
$s = \frac{720}{36} = 20m/sec$
According to ques.
Platform which is twice the length of train = 960 m
Speed 75% = $20 \times \frac{75}{100} = 15m/sec$
Required time = $\frac{960+480}{15} = 96\ sec = 1\ min\ 36\ sec$

Q.18 There is mixture of milk and water in a container in certain ratio. If 18 liters of water is added to mixture then quantity of water become becomes 60% of quantity of milk. If instead of 18 liter, 45 liters of water is added to mixture then quantity of water becomes 80% of quantity of milk. Find the initial quantity of mixture?

A. 178 liters
B. 108 liters
C. 165 liters
D. 198 liters
E. 224 liters

Answer: D

Sol:

Let quantity of milk & water in initial mixture be x and y respectively.
18 liters water added so ratio of milk and water is

$$\frac{x}{y+18}=\frac{5}{3}$$

3x=5y+90
3x-5y=90.....(i)
45 liters water added so ratio of milk & water is

$$\frac{x}{y+45}=\frac{5}{4}$$

4x=5y+225
4x-5y=225....(ii)
From (i) &(ii)
x = 135 liters, y = 63 liters
Initial quantity of mixture = 135+63 =198 liters
Alternative method
18 liters of water is added to mixture then quantity of water become becomes 60% of quantity of milk.
Ratio of milk & water = 5:3 .....(i)
If 45 liters of water is added to mixture then quantity of water becomes 80% of quantity of milk
Ratio milk & water = 5:4....(ii)
Quantity of milk in both (i) &(ii) is same
Change in water (i) &(ii) = 4-3=(45-18) liters
1=27 liters
Quantity of milk = 5 =5x27=135 liters
Quantity of water = 3x27-18=63 liters
Initial quantity of mixture = 135+ 63 =198 liters

Q.19 Income of A and B are in the ratio of 2:3. Ratio of amount of bill paid by them is in the ratio of 1:2 respectively. Both spends 10% of their incomes in purchasing groceries. Difference between their remaining amount is Rs. 8,000. If bill amount paid by A is 25% of his income, then find the amount paid by B on Bill.

A. Rs.18,500
B. Rs.12,500
C. Rs. 20,500
D. Rs. 16,500
E. Rs.20,000

Answer: E

Sol:

Income of A and B are in the ratio of 2:3
Let income of A = 200u, B = 300u
Bill of A= 50u, Bill B= 100u (amount of bill paid by A &B is in the ratio of 1:2 and bill amount paid by A is 25% of his income)
Purchasing Groceries by A and B = 20u & 30u respectively (A and B spends 10% of their incomes in purchasing groceries respectively)
A remaining amount = 200u −50u− 20u = 130u
B remaining amount =300u −100u− 30u = 170u
Difference between their remaining amounts
$170u - 130u$ = Rs.8,000
40u=8,000
1u=200
Bill paid by B = 200× 100 = Rs.20,000

Q.20 A boat takes 20 hours to travels downstream in river A and it takes 21 hours to travel same distance in downstream in river B. If speed of current in river A is 50% more than river B and speed of boat is 18 km/h, then find the speed of current in river A.

A. 3 km/h
B. 1.5 km/h

C. 2 km/h
D. 2.8 km/h
E. 4 km/h

Answer: A

Sol:

Let Distance be D km.
Let speed of current of river A and B be 3x and 2x respectively.
ATQ

$$\frac{\frac{D}{18+3x}}{\frac{D}{18+2x}} = \frac{20}{21}$$

x = 1
So, speed of current in river A = 3x = 3km/h

Q.21 A bag contains 4 red, 7 green, and 3 pink balls. One ball is chosen randomly from the bag. Find the probability of choosing either red ball or pink ball.

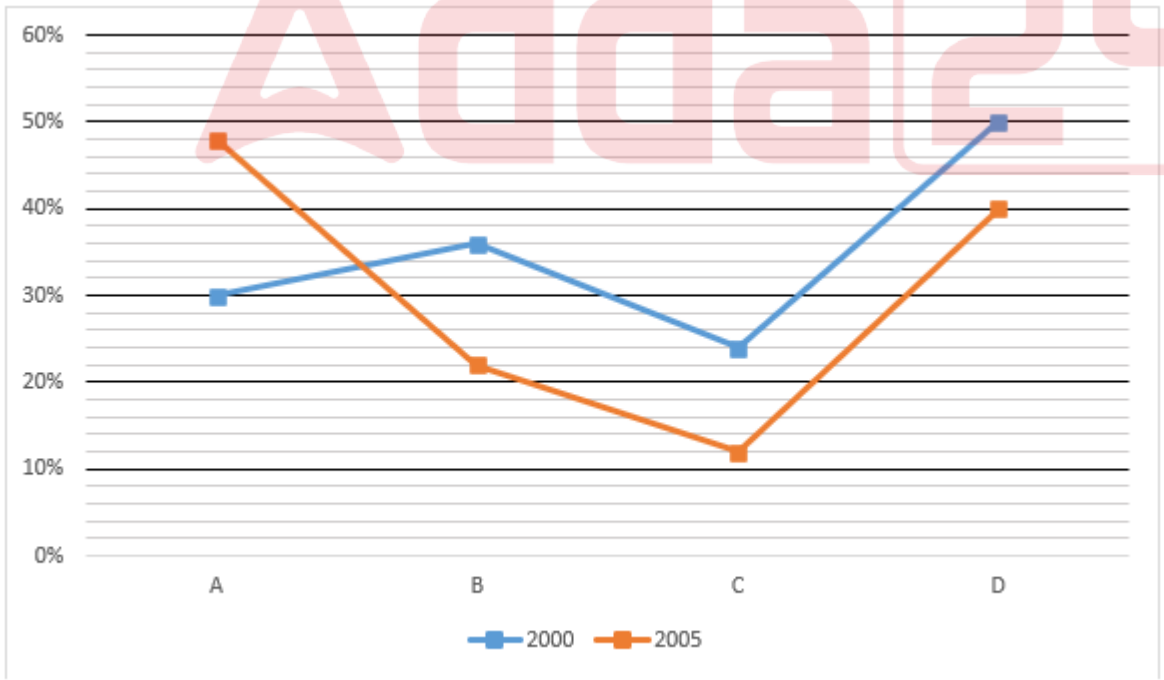
A. 1/6
B. 1/4
C. 1/3
D. 1/2
E. 1/8

Answer: D

Sol:

$$\frac{7c_1}{14c_1} = \frac{7}{14} = \frac{1}{2}$$

Q.22 If income of B in Year 2000 and 2005 are same, then difference between his saving for both years is approximately what percent of expenses of B in year 2000?
Line Graph shows saving% of four persons A, B, C and D in year 2000 and 2005. Annual Income = Annual Savings + Annual Expenses



A. 22%
B. 24%
C. 20%
D. 18%
E. 26%

Answer: A

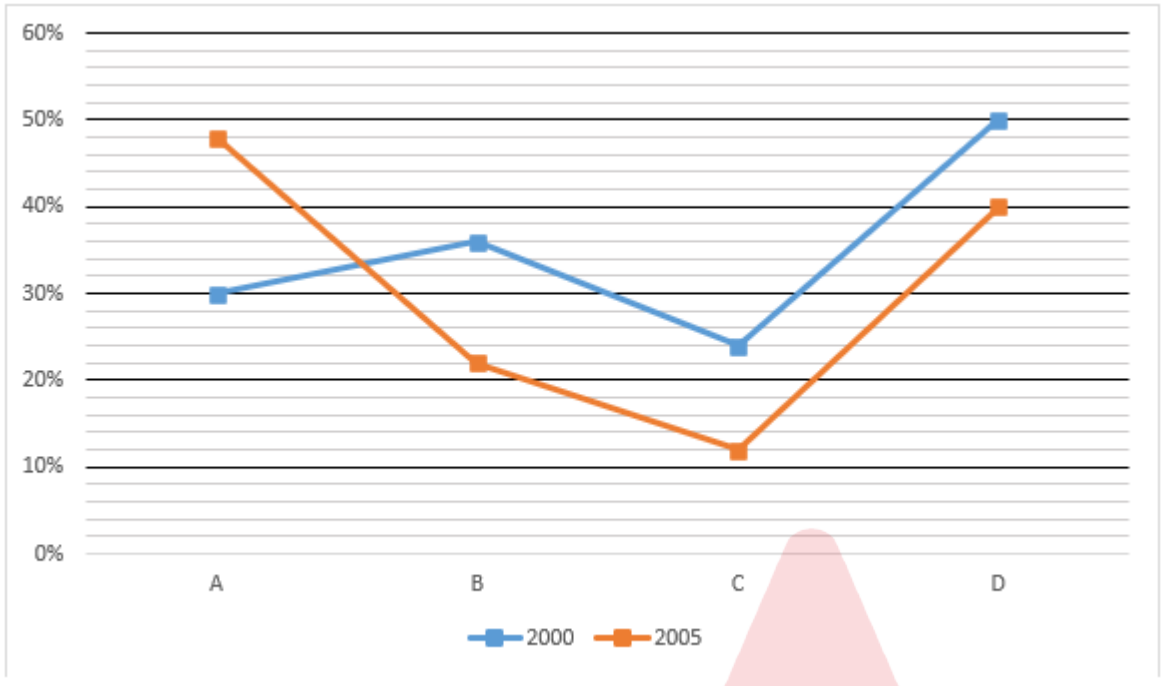
Sol:

Let the income of both be 100

Year	Income	Savings	Expenses
2000	100	36	64
2005	100	22	78

Req.% = 14/64 * 100 = 22%

Q.23 Annual income of D in year 2005 is Rs 2 lac more than that in Year 2000. His expense in year 2000 is equal to saving in 2005. What is his income in Year 2000?
Line Graph shows saving% of four persons A, B, C and D in year 2000 and 2005. Annual Income = Annual Savings + Annual Expenses



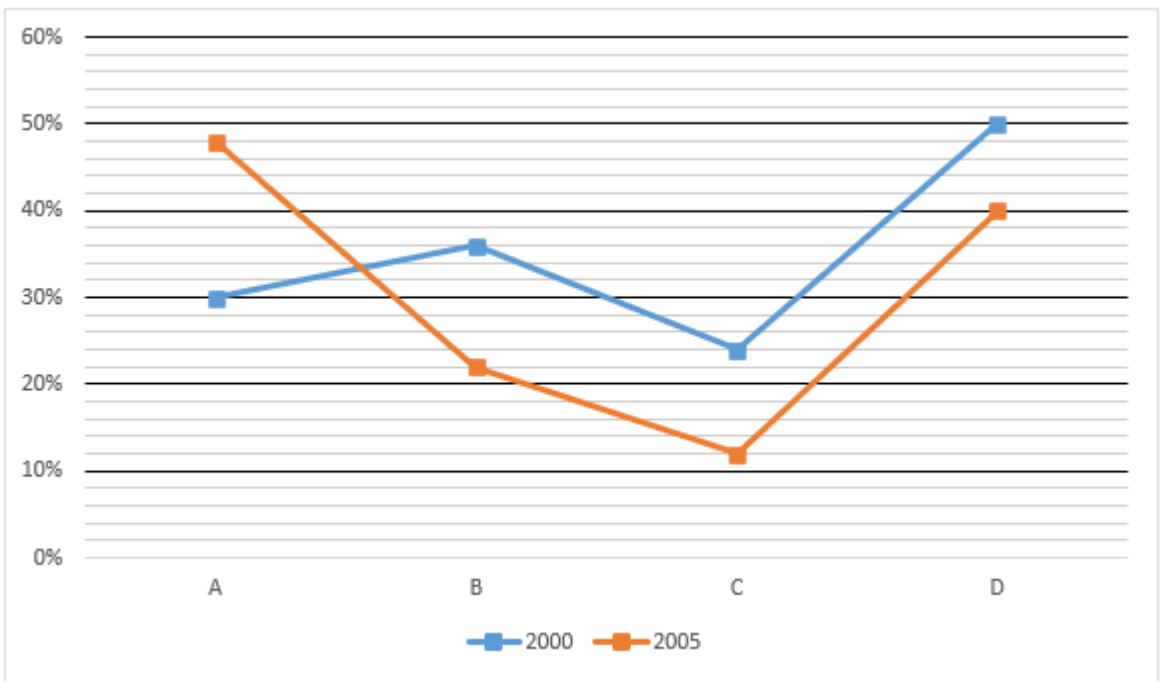
A. Rs. 12 lakh
B. Rs. 14 lakh
C. Rs. 6 lakh
D. Rs. 8 lakh
E. Rs. 10 lakh

Answer: D

Sol:

Let income of D in year 2000 be Rs. X.
ATQ
50% of X = 40% of (X+2)
5X = 4X + 8
X = 8
So, required income = Rs. 8 Lakh

Q.24 In year 2000, annual expenses of B and annual expenses of C are same. What is the ratio of Annual Income of C and B in year 2000?
Line Graph shows saving% of four persons A, B, C and D in year 2000 and 2005. Annual Income = Annual Savings + Annual Expenses



A. 16:19
B. 19:13
C. 16:17
D. 19:18
E. 19:15

Answer: A

Sol:

Exp. 64% of B = 76% of C
B : C = 16 : 19

Q.25 Average income of A is Rs 4.8 lacs for both year 2000 and 2005. If expenses of year 2005 for A is Rs .6 lacs more than that in year 2000, then find the income of A in Year 2000?
Line Graph shows saving% of four persons A, B, C and D in year 2000 and 2005. Annual Income = Annual Savings + Annual Expenses

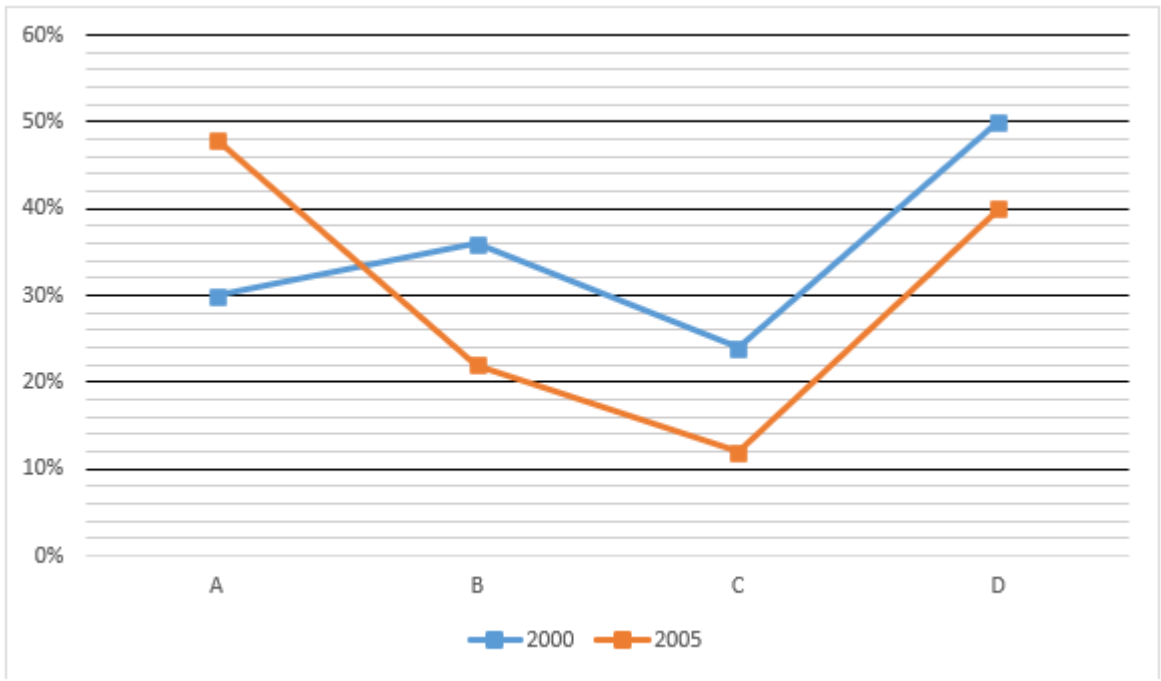
A. Rs. 4 lakh
B. Rs. 6 lakh
C. Rs. 2.40 lakh
D. Rs. 1.80 lakh
E. Rs. 3.6 lakh

Answer: E

Sol:

Total Income of A = 4.8×2 = 9.6 lacs
Let the income of A in yr 2000 be X and in yr 2005 be (9.6-X).
Expenses = 52% (9.6- X) – 70% of X = 0.6 .....in lacs
52×9.6 – 52x – 70x = 60
X = 439.2/122 = 3.6 lacs

Q.26 Monthly Saving of C in Year 2000 is 50% more than his monthly savings in Year 2005. If his monthly income in Year 2000 is Rs.9000 than find his annual income in Year 2005?
Line Graph shows saving% of four persons A, B, C and D in year 2000 and 2005. Annual Income = Annual Savings + Annual Expenses



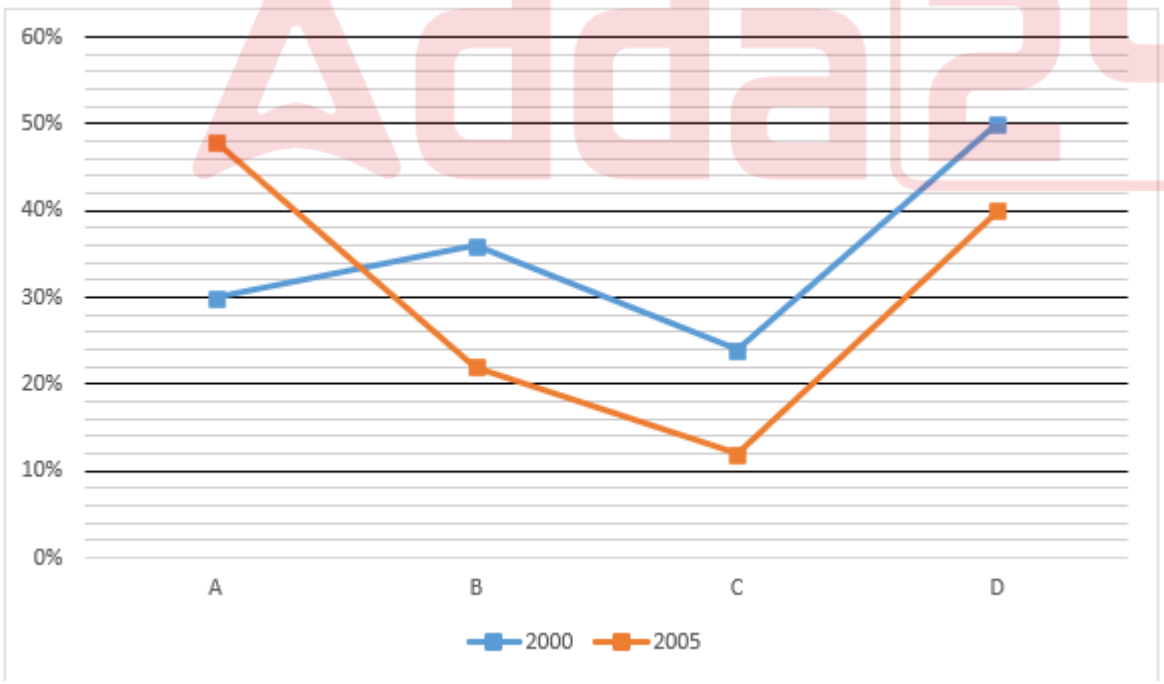
A. Rs. 1.34 lakh
B. Rs. 1.44 lakh
C. Rs. 1.29 lakh
D. Rs. 1.80 lakh
E. Rs. 1.57 lakh

Answer: B

Sol:

Monthly savings of C in 2000 : Monthly savings of C in 2005
3 : 2
Annual income in 2000 = 9000×12 = 108000
Annual savings in 2000 = 24% of 108000 = 25920
Monthly savings = 25920/12 = 2160
Monthly income of C in 2005 $= 2160 \times \frac{2}{3} \times \frac{1}{12} \times 100 = Rs.12000$
So, annual income of C in 2005 $= 12000 \times 12 = Rs.1.44\ Lac$

Q.27 If annual income of B in 2000 is Rs. 4 lakh and annual income of C in 2005 is Rs.3.50 lakh, then find the ratio between expenditure of C to expenditure of B.
Line Graph shows saving% of four persons A, B, C and D in year 2000 and 2005. Annual Income = Annual Savings + Annual Expenses



A. 11:19
B. 54:25
C. 25:54
D. 77:64
E. 64:77

Answer: D

Sol:

Annual income of B in 2000 is Rs. 4 lakh
Annual income of C in 2005 is Rs.3.50 lakh
Required ratio = $\frac{3,50,000}{100v} \times 88v : \frac{4,00,000}{100u} \times 64u$
= 77:64

Q.28 ?% of (4199.99 ÷6.87) = 876.22−6.34
What approximate value will come in place of question mark (?) in the following questions? (You are not expected to calculate the exact value)

A. 105
B. 137
C. 157
D. 111
E. 145

Answer: E

Sol:

?% of (4199.99 ÷6.87) = 876.22−6.34
?% of (4200 ÷ 7) = 876−6
$\frac{?}{100} \times 600 = 870$
? = 145

Q.29 (1040.78+?)÷ 2.89 = 1816.33 ÷ 3.9
What approximate value will come in place of question mark (?) in the following questions? (You are not expected to calculate the exact value)

A. 753
B. 389
C. 541
D. 456
E. 321

Answer: E

Sol:

(1040.78+?)÷ 2.89 = 1816.33 ÷ 3.9
(1041+?)÷ 3 = 1816 ÷ 4
(1041+?)÷ 3 =454
1041+? = 1362
? = 321

Q.30 $(15.95)^{\frac{1}{4}} + (3.01)^3 - 111.99 \times 2.02 + (9.98)^2 = ?$
What approximate value will come in place of question mark (?) in the following questions? (You are not expected to calculate the exact value)

A. - 95
B. 95
C. 90
D. -80
E. -90

Answer: A

Sol:

$(15.95)^{\frac{1}{4}} + (3.01)^3 - 111.99 \times 2.02 + (9.98)^2 = ?$

$2 + 27 - 112 \times 2 + 100 = ?$

$?=129 - 225 = -95$

Q.31 849 of (11/16.13) of (441.26 / 20.98) ÷ (17.13 / 319.85) = ?

What approximate value will come in place of question mark (?) in the following questions? (You are not expected to calculate the exact value)

A. 321000
B. 312000
C. 213000
D. 231000
E. 123000

Answer: D

Sol:

849 of (11/16.13) of (441.26 / 20.98) ÷ (17.13 / 319.85) = ?

$?= 850 \times 11/16 \times 441/21 \times 320/17$

$?=50 \times 11 \times 21 \times 20 = 231000$

Q.32 598% of 586 + 639% of 634.793 – 3285.998 = ?

What approximate value will come in place of question mark (?) in the following questions? (You are not expected to calculate the exact value)

A. 3650
B. 4300
C. 7650
D. 5690
E. 3890

Answer: B

Sol:

? = 598% of 586 + 639% of 634.793 - 3285.998

?=600% of 586 + 640% of 635 – 3286

?=3516 + 4064 - 3286

?=4294 ~4300

Q.33 **Simple interest earned on sum (x+500) after 6 years will be 44% more than simple interest on sum x after 5 years at same rate of interest. Find the value of x?**

A. Rs 3,200
B. Rs 3,600
C. Rs 2,500
D. Rs 2,150
E. Rs 1,970

Answer: C

Sol:

Let rate of interest be r%

According to ques

$\frac{(x+500)\times 6\times r\%}{x\times 5\times r\%} = \frac{144}{100}$

x = 2500

Q.34 Three pipes D, E and F can fill one tank in 20,24 and 12 hours respectively. If they are opened on alternate hours and pipe D is opened first, then find in how many hours, the tank will fill?

A. 17 hours 24 min.
B. 14 hours 24 min.
C. 16 hours 24 min.
D. 17 hours 40 min.
E. 16 hours 20 min.

Answer: A

Sol:

Capacity of a tank = L.C.M.(20,24,12) = 120 units
In 1 hour, capacity of water that D can fill = $\frac{120}{20} = 6\ units$
In 1 hour, capacity of water that E can fill = $\frac{120}{24} = 5\ units$
In 1 hour, capacity of water that F can fill = $\frac{120}{12} = 10\ units$
they are opened on alternate hours so, in the set of three hours = (6+5+10)units = 21 units
in 17 hours, capacity that gets filled = 116 units
remaining capacity = 120 – 116 = 4units
next hour. Its F's turn, it fills 10u/h
$= \frac{4\times60}{10}$ = 24 min.
Total time taken = 17 hours 24 min.

Q.35 Volume of a cone is $392\pi\ cm^3$ and its diameter and height are in the ratio of 7:12. Find the Curved surface area of the cone?

A. $180\pi\ cm^2$
B. $210\pi\ cm^2$
C. $189\pi\ cm^2$
D. $182\pi\ cm^2$
E. $175\pi\ cm^2$

Answer: E

Sol:

Let radius and height of cone be 7x unit and 24x unit respectively.
ATQ,
$\frac{1}{3}\pi r^2 h = 392\pi$
$\frac{1}{3}\pi \times 7x \times 7x \times 24x = 392\pi$
x=1
radius and height of cone be 7 cm and 24 cm respectively.
Slant height of cone = $\sqrt{7^2 + 24^2} = 25\ cm$
Curved surface area = πrl
$=7 \times 25\pi$
$=175\pi\ cm^2$.

Q.36 How many students have majored in only one subject?
Study the following information carefully and answer the questions given below.

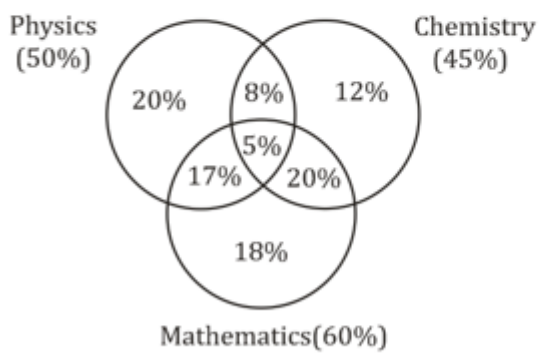
Out of 6000 students from a college X, 20% of total students have majored in physics only, 12% have majored in chemistry only. 20% have majored in both chemistry & mathematics only. 5% of total students have majored in all three subjects together while 45% students have majored in only two subjects. In chemistry, 45% students have majored.

A. 2400
B. 2200
C. 3000
D. 3600
E. 2000

Answer: C

Sol:

Students who majored in both Physics and Chemistry
only = $(45 - 12 - 20 - 5)\%$
$= 8\%$
Students who majored in both Physics and Mathematics
only = $(45 - 20 - 8)\%$
$= 17\%$
Students who majored in Mathematics only
$= (100 - 20 - 8 - 12 - 17 - 5 - 20)\%$
$= 18\%$



(Venn Diagram showing % of students in various Subjects)
Total Students = 6000

Students who have majored in only one subject
= (20 + 12 + 18)% of 6000
= 50% of 6000
= 3000

Q.37 How many students have majored in Mathematics as a subject?
Study the following information carefully and answer the questions given below.

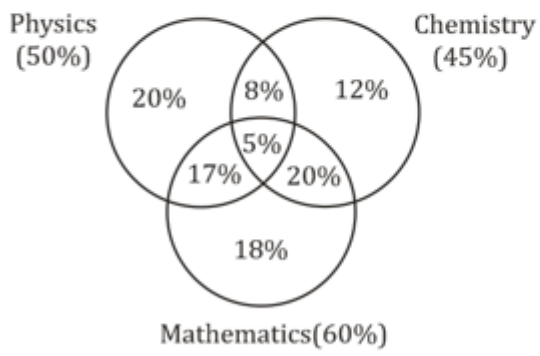
Out of 6000 students from a college X, 20% of total students have majored in physics only, 12% have majored in chemistry only. 20% have majored in both chemistry & mathematics only. 5% of total students have majored in all three subjects together while 45% students have majored in only two subjects. In chemistry, 45% students have majored.

A. 1080
B. 2520
C. 3600
D. 2700
E. 3300

Answer: C

Sol:

Students who majored in both Physics and Chemistry
only = $(45 - 12 - 20 - 5)\%$
$= 8\%$
Students who majored in both Physics and Mathematics
only = $(45 - 20 - 8)\%$
$= 17\%$
Students who majored in Mathematics only
$= (100 - 20 - 8 - 12 - 17 - 5 - 20)\%$
$= 18\%$



(Venn Diagram showing % of students in various Subjects)
Total Students = 6000

Students who have majored in Mathematics
= (17 + 5 + 20 + 18)% of 6000
= 60% of 6000
= 3600

Q.38 What is the total number of students who have majored in only 2 subjects?
Study the following information carefully and answer the questions given below.

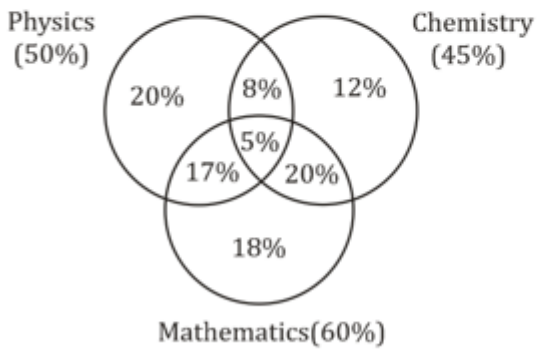
Out of 6000 students from a college X, 20% of total students have majored in physics only, 12% have majored in chemistry only. 20% have majored in both chemistry & mathematics only. 5% of total students have majored in all three subjects together while 45% students have majored in only two subjects. In chemistry, 45% students have majored.

A. 1020
B. 2700
C. 1200
D. 3000
E. 2100

Answer: B

Sol:

Students who majored in both Physics and Chemistry only = $(45 - 12 - 20 - 5)\%$
$= 8\%$
Students who majored in both Physics and Mathematics only = $(45 - 20 - 8)\%$
$= 17\%$
Students who majored in Mathematics only
$= (100 - 20 - 8 - 12 - 17 - 5 - 20)\%$
$= 18\%$



(Venn Diagram showing % of students in various Subjects)
Total Students = 6000

Students who have majored in only 2 subjects
= (17 + 8 + 20)% of 6000
= 45% of 6000
= 2700

Q.39 Students who have majored in both Mathematics & Physics only are what percent of total students who have majored in physics?
Study the following information carefully and answer the questions given below.

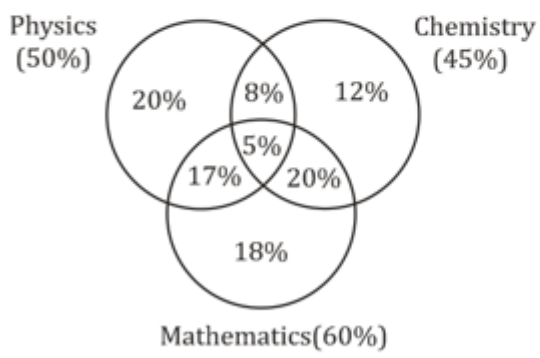
Out of 6000 students from a college X, 20% of total students have majored in physics only, 12% have majored in chemistry only. 20% have majored in both chemistry & mathematics only. 5% of total students have majored in all three subjects together while 45% students have majored in only two subjects. In chemistry, 45% students have majored.

A. 76%
B. 36%
C. 40%
D. 44%
E. 34%

Answer: E

Sol:

Students who majored in both Physics and Chemistry only = $(45 - 12 - 20 - 5)\%$
$= 8\%$
Students who majored in both Physics and Mathematics only = $(45 - 20 - 8)\%$
$= 17\%$
Students who majored in Mathematics only
$= (100 - 20 - 8 - 12 - 17 - 5 - 20)\%$
$= 18\%$



(Venn Diagram showing % of students in various Subjects)
Total Students = 6000

Students who have majored in both Mathematics & Physics only = 17% of 6000 = 1020
Students who have majored in Physics
$= (20 + 8 + 5 + 17)\%$ of 6000
$= 50\%$ of 6000
$= 3000$
required percentage $= \frac{1020}{3000} \times 100 = 34\%$

Q.40 **Find the ratio of students who have majored in Physics to students who have majored in all three subjects together.**
Study the following information carefully and answer the questions given below.

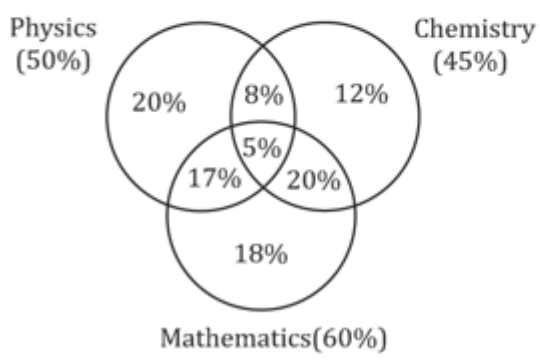
Out of 6000 students from a college X, 20% of total students have majored in physics only, 12% have majored in chemistry only. 20% have majored in both chemistry & mathematics only. 5% of total students have majored in all three subjects together while 45% students have majored in only two subjects. In chemistry, 45% students have majored.

A. 13 : 2
B. 8 : 3
C. 7 : 1
D. 10 : 1
E. None of the above.

Answer: D

Sol:

Students who majored in both Physics and Chemistry only = $(45 - 12 - 20 - 5)\%$
$= 8\%$
Students who majored in both Physics and Mathematics only = $(45 - 20 - 8)\%$
$= 17\%$
Students who majored in Mathematics only
$= (100 - 20 - 8 - 12 - 17 - 5 - 20)\%$
$= 18\%$



(Venn Diagram showing % of students in various Subjects)
Total Students = 6000

Required ratio $= \frac{(20+8+5+17)}{5}$
$= 10 : 1$