



Date : 25th Nov 2023

Quantitative Aptitude – Data Sufficiency

English

Directions 1 – 5 : The following questions are accompanied by two statements (I), (II), and (III). You have to determine which statements(s) is/are sufficient/necessary to answer the questions.

Q:1 Find the profit percentage (%) on an article whose cost price is Rs. 500.

Statement I: The price of the article is marked 20% above the cost price.

Statement II: The discount given on the article is 10%.

Statement III: The selling price of the article is Rs. 540.

1. Statement (I) , (II) and (III) are necessary to answer the question
2. Statements (I) , (II) and (III) are sufficient to answer the question
3. Statements (I) and (II) are sufficient to answer the question
4. Statement (III) alone is sufficient to answer the question
5. Both option 3 and option 4 are true

Q:2 What is the area of the rectangle?

Statement I: The difference between the sides is 5 cm.

Statement II: The measure of the diagonal is 10 cm.

Statement III: There are two diagonals in the rectangle.

1. Only Statement I and Statement II are sufficient
2. Either Statement I and Statement II or Statement II and Statement III are sufficient
3. Only Statement II and Statement III are sufficient
4. All statements together are necessary to answer the question
5. All three statements are not sufficient

Q:3 The weight of the 1st quantity is 2 kg, and the weight of the 2nd quantity is 4 kg. What is the price of the 2nd quantity? (Total cost of the quantity = weight of the quantity × price of the quantity)

Statement I: The price of 1st quantity is 66 Rs/kg.

Statement II: The ratio between the total cost of 1st quantity and 2nd quantity is 11 : 9.

Statement III: 2nd quantity is sold at a profit of 10%.

1. Only Statement I required
2. Only Statement II required
3. Only Statement III required
4. Only Statement I and Statement III required

5. Only Statement I and Statement II required

Q:4 Ramesh, Ankush and Vivek started a business together. In what proportion would the annual profit be distributed among them?

Statement I: Ramesh got $\frac{1}{4}$ of the profit

Statement II: Ramesh and Vivek contribute 75% of the total investment

Statement III: Vivek got $\frac{1}{2}$ of the profit

1. Only Statement I required
2. Only Statement II required
3. Only Statement I and Statement II required
4. Only Statement III and Statement II required
5. Any of the two statements alone are required

Q:5 What is the value of z?

Statement I: $x + y + z = 4$

Statement II: $2x + y^2 + z = 15$

Statement III: $x^2 + y^3 + z^2 = 77$

1. Only Statement I required
2. Only Statement II required
3. Only Statement III required
4. Each statement alone is sufficient.
5. All statement can't give the answer

Directions 6 – 9 : The following questions are accompanied by three statements (I), (II) and (III). You have to determine which statements(s) is/are sufficient/necessary to answer the questions.

Q:6 Find the amount of C in a mixture of A, B, and C.

Statement I: The total amount of mixture is 1300 ml.

Statement II: The ratio of A and B is 1 : 3.

Statement III: The Quantity of A in the mixture is 200 ml.

1. The data in statements I alone is sufficient to answer the question, while the data in statement II and III is not sufficient to answer the question.
2. The data in statements II and III is sufficient to answer the question, while the data in statement I is not sufficient to answer the question.
3. The data in statements I and II or in statement II and III is sufficient to answer the question.
4. The data in all the statements I, II and III is not sufficient to answer the question.
5. All statement can't give the answer

Q:7 Find the number of days C will take to finish the job on his own.

Statement I: A alone takes 7 days to finish the job.

Statement II: A and B together take 56/15 days to complete the job.

Statement III: B and C together take 40/13 days to complete the job.

1. Only Statement I and Statement III are sufficient
2. Either Statement I and Statement II or Statement II and Statement III are sufficient
3. Only Statement II and Statement III are sufficient
4. All statements together are necessary to answer the question
5. All three statements are not sufficient

Q:8 Jawahar is as smaller than Anup as he is older than Ram. Find the age of Jawahar.

Statement I. The sum of the age of Anup and Ram is 48 years.

Statement II. Age of Ram is 12 years.

Statement III. Age of Anup is 36 years.

1. Only Statement I required
2. Only Statement II required
3. Only Statement III required
4. Either only Statement I or both Statement II and Statement III required
5. Either only Statement II or both Statement I and Statement III required

Q:9 What is the marked price of the suitcase?

I. When a discount of 15% is offered, the profit earned is 10.5%.

II. The cost price of the suitcase is Rs. 1500.

III. The marked price is 30% above the cost price.

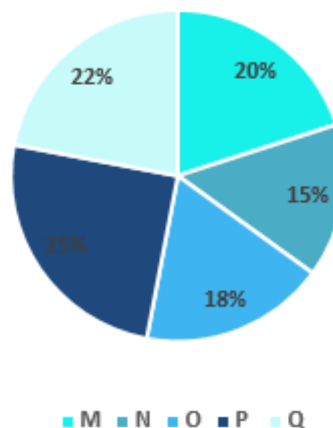
1. Only Statement I and Statement III are sufficient
2. Either Statement I and Statement II or Statement II and Statement III are sufficient
3. Only Statement II and Statement III are sufficient
4. All statements together are necessary to answer the question
5. All three statements are not sufficient

Q:10 Study the following graphs and answer the following questions.

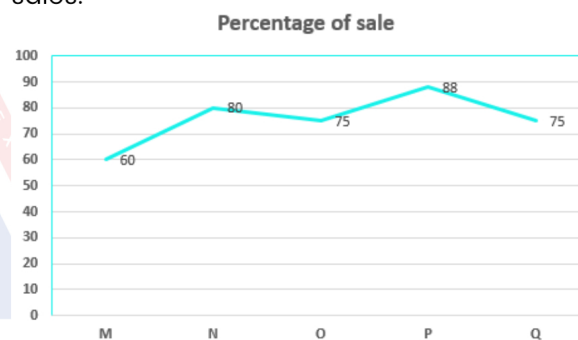
The following pie chart shows the production of rice by 5 different factories.

Total production = 3600 kg

Production of Rice



The following line chart shows the percentage of sales.



Rice sold by factory M and N together is how much percent more than the production of rice by factory M?

Statement I: The production of rice in factory M is 20% of the total production.

Statement II: The rice sold by factory M is 60% of the production by the same factory.

Statement III: The rice sold by factory N is 80% of the production by the same factory.

1. Only II and III are sufficient
2. Only I and II are sufficient
3. Only I and III are sufficient
4. All together are sufficient
5. None of these

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Answer Key

1. (5)	2. (1)	3. (5)	4. (5)	5. (5)
6. (5)	7. (4)	8. (4)	9. (2)	10. (4)

Answers and Solutions

Q:1 The correct answer is **option 5** i.e. **Both option 3 and option 4 are true.**

According to the given question

the cost price of the article, c.p. = Rs. 500

Statement (I) : Marked price is marked 20% above the cost price

Marked price, M.P. = $(120/100) \times 500$

M.P. = Rs. 600

Statement (II) : Discount (%) = 10%

Taking m.p. = Rs. 600 from statement (I)

selling price s.p. = $(90/100) \times 600$

S.P. = Rs. 540

Profit = $(540 - 500) = \text{Rs. } 40$

Profit percentage = $(40/500) \times 100 = 8\%$

Therefore statements (I) and (II) together are sufficient to answer the given question.

Statement (III) : Selling price of the article is given as Rs. 540

Therefore Profit = $(540 - 500) = \text{Rs. } 40$

Profit percentage = $(40/500) \times 100 = 8\%$

Hence statement (III) alone is sufficient to answer the given question.

So, option 5 is correct.

Q:2 The correct answer is **option 1** i.e. **Only Statement I and Statement II are sufficient.**

We know that area of the rectangle = Length \times breadth = LB

Statement I:

Let the length and breadth of the rectangle be L and B

$L - B = 5$

Statement II:

$\Rightarrow (\text{Diagonal})^2 = L^2 + B^2 = 100$

Using the formula of $(a - b)^2$ we get

$\Rightarrow (L - B)^2 = L^2 + B^2 - 2LB$

$\Rightarrow 25 = 100 - 2LB$

$\Rightarrow 2LB = 75$

$\Rightarrow LB = 37.5 \text{ cm}^2$

Statement III: It is a basic property of a rectangle and does not provide any help in finding the area. Hence, Only Statement I and Statement II are sufficient

Q:3 The correct answer is **option 5** i.e. **Only Statement I and Statement II required.**

Statement I :

We know that Total cost of the quantity = weight of the quantity \times price of the quantity

Total cost of Quantity I = $66 \times 2 = \text{Rs. } 132$

Statement II :

Ratio of total cost of 1st quantity and 2nd quantity is 11 : 9

Let the total cost of 1st quantity and 2nd quantity be $11x$ and $9x$

According to the question:

For 1st quantity:

$\Rightarrow 11x = 132$

$\Rightarrow x = 12$

For 2nd quantity:

Total cost = $9x = 9 \times 12 = 108$

Price of 2nd quantity = Total cost/weight

$\Rightarrow 108/4 = \text{Rs } 27/\text{kg}$

Statement III gives information about profit from which we cannot derive any value.

Hence, Only Statement I and Statement II required

Q:4 The correct answer is **Option 5** i.e. **Any of the two statements alone are required**

Statement I gives the profit part of Ramesh, Statement III gives the profit part of Vivek, and when both are combined, we can find the profit part of Ankush. Similarly, if any of these are combined with statement II, we can find the profit part of Ankush.

Let the total investment be x , and the profit of Ramesh, Ankush and Vivek be denoted by R , V and A

then from Statement I and II, $R = x/4$ & $R + V = 75/100 \times x$

$\Rightarrow R + V = 3x/4$

Now, $V = 3x/4 - x/4 = x/2$

So, $A = x - (x/4 + x/2)$

$A = x/4$

Now, from statement II and III

$V = x/2$

& $R + V = 75/100 \times x$



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$$R + V = 3x/4$$

$$\text{So, } R = x - (x/4 + x/2)$$

$$R = x/4$$

$$\text{So, } A = x - (x/4 + x/2)$$

Similarly, from statement I and II,

$$R + V = x/4 + x/2 = 3x/4$$

$$A = x - 3x/4 = x/4$$

$$\text{Hence, } R : A : V = 1 : 1 : 2$$

Q:5 The correct answer is **option 5** i.e. **All statement can't give the answer**

We have three equations, but all variables are not in the same order, so we can't find the answer to this set of equations.

Q:6 The correct answer is **option 5** i.e. **The data in all the statements I, II and III together is necessary to answer the question.**

From statement I : we get, total amount of mixture is = 1300 ml.

From statement II : we get, ratio of A and B is 1 : 3

From statement III : we get, quantity of A is 200 ml

Therefore, $(200/x) = (1/3) \Rightarrow x = 600$ ml or

quantity of B is 600 ml

So, quantity of C is $1300 - A - B = 1300 - 200 - 600 = 500$ ml

Q:7 The correct answer is **option 4** i.e. **All statements together are necessary to answer the question.**

From statement I we get, A alone takes 7 days to finish the job.

From statement II, we get

$$1/A + 1/B = 15/56 \Rightarrow 56(A + B) = 15AB,$$

Substituting value of $A = 7$ in this, we get $56(7 + B) = 15 \times 7 \times B \Rightarrow 56 + 8B = 15B \Rightarrow B = 8$ days

From statement III, we get $1/B + 1/C = 13/40$

$$1/8 + 1/C = 13/40$$

$$1/C = 13 - 5/40$$

$$C = 5 \text{ days}$$

Q:8 The correct answer is **Option 4** i.e. **Either only Statement I or both Statement II and Statement III required**

By Statement I,

According to question,

Age of Jawahar = Average of Age of Anup and

Ram

Age of Jawahar = $48/2 = 24$ years

By Statement II and Statement III,

Age of Jawahar = Average of Age of Anup and Ram

Age of Jawahar = $(12 + 36)/2 = 48/2 = 24$ years

Hence, Either only Statement I or both Statement II and Statement III required

Q:9 The correct answer is **option 2** i.e. **Either Statement I and Statement II or Statement II and Statement III are sufficient**

From Statements I and II:

Cost price = 1500

Gain = 10.5%

Selling price = 110.5% of cost price = $(110.5 \times 1500/100) = 1657.50$

Discount = 15%

Marked price = $(100 \times 1657.5/85) = 1950$

From Statements II and III:

Marked price = 130% of cost price = $(130 \times 1500/100) = 1950$

Q:10 The correct answer is **option 4** i.e. **All together are sufficient**

Statement I:

The production of Rice in factory M is 20% of the total production = $(20\% \text{ of } 3600) = 720$ kg

Statement II:

Rice sold by factory M = $3600 \times 20\% \times 60\% = 432$ kg.

Statement III:

Rice sold by factory N = $3600 \times 15\% \times 80\% = 432$ kg.

Required Percentage = $(432 + 432 - 720)/720 \times 100$

= $(144/720) \times 100 = 20\%$

Hence, from the solution, we can conclude that all the statements together are sufficient.