

Directions: Each of the questions below consists of a question and three statements numbered I, II and III given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read all the statements and give answer.

1. Is the average age of the students of a school less than 17 years?

Statement I : The strength of the class VIII is less than 25% of the strength of the school.

Statement II : The average age of the students of class VIII of the school is 18 years and that of the remaining classes is 16 years.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
- C. If the data either in statement I alone or in statement II alone is sufficient to answer the question
- D. If the data in both statements I and II together are necessary to answer the question
- E. If the data given in both statements I and II together are not sufficient to answer the question.

2. Among 20 retired persons, is the number of persons, who are having at least 20 years of service, less than 8?

Statement I : Exactly 17 persons joined the service before 2000 and exactly 14 persons retired after 2020.

Statement II : Exactly 14 persons joined the service after 2000 and exactly 6 persons retired before 2020.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
- C. If the data either in statement I alone or in statement II alone is sufficient to answer the question
- D. If the data in both statements I and II together are necessary to answer the question
- E. If the data given in both statements I and II together are not sufficient to answer the question.

3. The lengths of trains A and B are in the ratio 2:3. Which of them takes less time to cross the same platform?

Statement I : The time taken by train A to cross train B when they are moving in opposite directions is half the time taken by it to cross train B, when moving in the same direction.

Statement II : The ratio of the length of train B to that of the platform is 4 : 3.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I

alone is not sufficient to answer the question

C. If the data either in statement I alone or in statement II alone is sufficient to answer the question

D. If the data in both statements I and II together are necessary to answer the question

E. If the data given in both statements I and II together are not sufficient to answer the question.

4. Is the speed of the boat in still water at least twice that of the speed of the stream?

Statement I : The time taken by the boat to reach a point P, from Q is exactly twice the time taken by the boat, to reach Q from the point P.

Statement II : The time taken by the boat to cover 8 km downstream is 40 minutes and it takes four hours to cover 16 km upstream.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
- C. If the data either in statement I alone or in statement II alone is sufficient to answer the question
- D. If the data in both statements I and II together are necessary to answer the question
- E. If the data given in both statements I and II together are not sufficient to answer the question.

5. Rani, Supriya and Amita work on a project. If each of them is of a different efficiency.

Who is the fastest worker among them?

Statement I : Rani and Supriya take 5 days to complete the project while Supriya and Amita take 10 days to complete the same project.

Statement II: Rani and Amita take 30/7 days to complete the project.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
- C. If the data either in statement I alone or in statement II alone is sufficient to answer the question
- D. If the data in both statements I and II together are necessary to answer the question
- E. If the data given in both statements I and II together are not sufficient to answer the question.

6. Sum of ages of Julia, Rani, Amelia and Sonia is 91. What is the present age of Amelia?

Statement I : Ratio of ages of Sonia and Julia 6 years ago was 9 : 7.

Statement II : Ratio of ages of Julia and Amelia after 10 years will be 6 : 7.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question

- C. If the data either in statement I alone or in statement II alone is sufficient to answer the question
 D. If the data in both statements I and II together are necessary to answer the question
 E. If the data given in both statements I and II together are not sufficient to answer the question.

7. What will be the height of three friends Rahul, Robert and Priyanka altogether, if Priyanka's height is 39 cm?

Statement I : The sum of the heights of Rahul and Priyanka is equal to 160 cm.

Statement II : The height of Robert is equal to 3 times the height of Priyanka.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
 B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
 C. If the data either in statement I alone or in statement II alone is sufficient to answer the question
 D. If the data in both statements I and II together are necessary to answer the question
 E. If the data given in both statements I and II together are not sufficient to answer the question.

8. The cost price of an article is Rs.100. What is the percentage profit earned by the merchant on selling the article?

Statement I : The marked price of the article was 140% of the cost price.

Statement II : A discount of 21% on the marked price was given on the article.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
 B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
 C. If the data either in statement I alone or in statement II alone is sufficient to answer the question.
 D. If the data in both statements I and II together are necessary to answer the question.
 E. If the data given in both statements I and II together are not sufficient to answer the question.

9. Find the two-digit number.

Statement I : The difference between the digits and the product of the digits of the number are 2 and 15 respectively.

Statement II : The digit at the ten's place is less than the digit at unit's place.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question.
 B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question.
 C. If the data either in statement I alone or in statement II alone is sufficient to answer the question.
 D. If the data in both statements I and II together are necessary to answer the question.

- E. If the data given in both statements I and II together are not sufficient to answer the question.

10. If two taps, T1 and T2 are opened simultaneously, how long would it take for the empty tank to be filled to 50% of its capacity?

Statement I : T1 can fill the empty tank in 12 hours.

Statement II : T2 can empty 50% the tank in 10 hours.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
 B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question.
 C. If the data either in statement I alone or in statement II alone is sufficient to answer the question.
 D. If the data in both statements I and II together are necessary to answer the question.
 E. If the data given in both statements I and II together are not sufficient to answer the question.

Answer Key

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|----|
| D | A | A | C | A | E | D | D | D | D |

Directions: Each of the questions below consists of a question and three statements numbered I, II and III given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read all the statements and give answer.

1. How many students from IIT Dhanbad got the placement?
Statement I : Number of students studying in IIT Dhanbad and IIT Kanpur are in the ratio of 3 : 4 respectively and 80% of the students studying in IIT Kanpur got placement.

Statement II : Number of students who got placement from IIT Kanpur is 120% of the number of students who got placement from IIT Dhanbad.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
- C. If the data either in statement I alone or in statement II alone is sufficient to answer the question
- D. If the data in both statements I and II together are necessary to answer the question
- E. If the data given in both statements I and II together are not sufficient to answer the question.

2. Virat's income is how much more than Rohit's income?
Statement I : Virat's income is 30% less than his wife, whose provident fund deduction is Rs. 975 per month which is 5% of her monthly income.
Statement II : Rohit spends 30% of his income on house rent, 15% of which is accessory bill and Virat's expenditure on house rent is Rs. 4500 more than that of Rohit's.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
- C. If the data either in statement I alone or in statement II alone is sufficient to answer the question
- D. If the data in both statements I and II together are necessary to answer the question
- E. If the data given in both statements I and II together are not sufficient to answer the question.

3. Two trains A and B are travelling towards each other on the same track. The initial distance between them is 91 km. Find the time, when the two trains will collide.
Statement I : The speed of train A is 65km/h and the speed of B is 104 km/h more than that of train A.

Statement II : The ratio of speeds of the two trains is 5 : 13.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
- C. If the data either in statement I alone or in statement II alone is sufficient to answer the question

D. If the data in both statements I and II together are necessary to answer the question

E. If the data given in both statements I and II together are not sufficient to answer the question.

4. Find the amount of money invested by Jamnalal in the scheme?

Statement I : An increase in simple interest from 44/3% to 58/3% per annum increases his yearly income by 2800.

Statement II : The sum invested get doubled, when invested at 20% per annum for 5 years.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
- C. If the data either in statement I alone or in statement II alone is sufficient to answer the question
- D. If the data in both statements I and II together are necessary to answer the question
- E. If the data given in both statements I and II together are not sufficient to answer the question.

5. Pipe A and B can fill a tank at the rate of 12 and 10 litre per minute respectively. There is a leakage also in the same tank. What is the capacity of the tank?

Statement I : If A and B are opened simultaneously, the tank is filled in 5 hours 45 minutes and a leakage hole drains the pipe at the rate of 6 litres/minute.

Statement II: Due to the leak the filled tank drains in 15 hours 20 minutes. If A and B are opened simultaneously, the tank is filled in 5 hours 45 minutes.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
- C. If the data either in statement I alone or in statement II alone is sufficient to answer the question
- D. If the data in both statements I and II together are necessary to answer the question
- E. If the data given in both statements I and II together are not sufficient to answer the question.

6. There are some pens in a box of blue and black colour and the number of ways of choosing x and (x + 2) pens out of the number of pens in the box is same. If two pens are chosen randomly, then find the probability that both the pens are black in colour.

Statement I : The number of black pens is 33.33% of the total number of pens.

Statement II : If 2 pens can be chosen from the same number of pens in 15 ways and the ratio of the number of blue pens to black pens is 2 : 1.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
- C. If the data either in statement I alone or in statement II alone is sufficient to answer the question
- D. If the data in both statements I and II together are necessary to answer the question
- E. If the data given in both statements I and II together are not sufficient to answer the question.

7. Mixture X and Mixture Y contain 40 litres and 60 litres respectively of a mixture of liquid A and liquid B. Quantity of liquid B in mixture X is 25 litres. 20% of mixture X is put into mixture Y. In the end, what was the quantity of liquid B in mixture Y?

Statement I : Initially, the quantity of liquid B in mixture X was 5 litres more than the quantity of liquid B in mixture Y.

Statement II : The total quantity of liquid B in both mixtures is 45 litres.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
- C. If the data either in statement I alone or in statement II alone is sufficient to answer the question
- D. If the data in both statements I and II together are necessary to answer the question
- E. If the data given in both statements I and II together are not sufficient to answer the question.

8. A conical vessel of height 12 cm contains 50% of water in it. If this volume of water is transferred to the cuboidal vessel, then find the height of water in the cuboidal vessel. [Use $\pi = 3$]

Statement I : The length and breadth of the cuboidal vessel is 10 cm and 6 cm.

Statement II : The radius of the conical vessel is equal to the height of the water raised in the cuboidal vessel.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
- C. If the data either in statement I alone or in statement II alone is sufficient to answer the question.
- D. If the data in both statements I and II together are necessary to answer the question.
- E. If the data given in both statements I and II together are not sufficient to answer the question.

9. There are three participants A, B and C in a race. How much time does C take to complete the race of 1000m?

Statement I : A beats B by 200 m in 1000 m race, B beats C by 200 m in 1000 m race and

A beats C by 18 seconds in a race of 800 m.

Statement II : A beats B and C in a race of 1000 m by 50 seconds and 450 m respectively, B beats C by 40 seconds in a race of 1000 m.

A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question.

B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question.

C. If the data either in statement I alone or in statement II alone is sufficient to answer the question.

D. If the data in both statements I and II together are necessary to answer the question.

E. If the data given in both statements I and II together are not sufficient to answer the question.

10. The average of the weights of X and Y is 54 kg and the average of the weights of Z and W is 48 kg. What is the difference between the weights of X and Y?

Statement I : The average of the weights of Y, Z and W is 48 kg.

Statement II : The ratio of the weights of X and Z is 3 : 2.

A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question

B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question.

C. If the data either in statement I alone or in statement II alone is sufficient to answer the question.

D. If the data in both statements I and II together are necessary to answer the question.

E. If the data given in both statements I and II together are not sufficient to answer the question.

Answer Key

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|----|
| E | E | A | A | C | B | C | D | C | A |

Directions: Each of the questions below consists of a question and three statements numbered I, II and III given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read all the statements and give answer.

1. Car A is moving behind car B in the same direction and the distance between them initially is 40 km and the speed of car B is 50 km/hr, then how long would car A take to

cross car B. [Assume the length of the cars to be negligible]

Statement I : The time taken car B to cover a distance of 200 km is 4 hours.

Statement II : if the cars were moving in the opposite directions, towards each other, the relative speed of car A with respect to car B would have been 120 km/hr.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
- C. If the data either in statement I alone or in statement II alone is sufficient to answer the question
- D. If the data in both statements I and II together are necessary to answer the question
- E. If the data given in both statements I and II together are not sufficient to answer the question.

2. A man rows a boat upstream for a certain distance at a speed of 18 km/hr. If the ratio of speed of man in still water to the speed of stream is 5 : 2, find the time taken to row a boat downstream to cover the same distance covered upstream.

Statement I : The total time taken by the man to cover upstream and downstream is 25/7 hours.

Statement II : The time taken to cover the distance upstream is 2.5 hours.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
- C. If the data either in statement I alone or in statement II alone is sufficient to answer the question
- D. If the data in both statements I and II together are necessary to answer the question
- E. If the data given in both statements I and II together are not sufficient to answer the question.

3. Vivek mixes water and milk in an empty container A. Find the amount of water mixed by Vivek.

Statement I : The ratio of the amount of water and the amount of milk in the container

A is 5 : 13, respectively after Vivek has mixed milk and water. Vivek sells 72 litres of the mixture and then adds 44 more litres of a mixture of water and milk in the container.

After mixing 44 more litres of the mixture, the ratio of the amount of water and the amount of milk becomes 4 : 9, respectively.

Statement II : The ratio of the amount of water and the amount of milk in the container

A is 5 : 13, respectively after Vivek has mixed milk and water. Vivek sells 72 litres of the mixture and then adds 44 more litres of a mixture of water and milk in the container in the ratio 5 : 6, respectively.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
- C. If the data either in statement I alone or in statement II alone is sufficient to answer the question
- D. If the data in both statements I and II together are necessary to answer the question
- E. If the data given in both statements I and II together are not sufficient to answer the question.

4. Water and alcohol have been added in an empty container. Find the amount of water that has been added in the container.

Statement I : The ratio in which water and alcohol have been added is 11 : 5, respectively and 160 litres of the mixture has been sold after mixing. Then 25 litres of water and 25 litres of alcohol are mixed in the container and the ratio of water and alcohol became 2 : 1, respectively.

Statement II : The ratio in which water and alcohol have been added is 11 : 5,

- respectively. If 80 litres of another mixture of water and alcohol has been added then the ratio of water and alcohol became 5 : 3, respectively.
- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
- C. If the data either in statement I alone or in statement II alone is sufficient to answer the question
- D. If the data in both statements I and II together are necessary to answer the question
- E. If the data given in both statements I and II together are not sufficient to answer the question.

5. There is a cylindrical tank in a society in which water is stored. What is the height of the tank?

Statement I: The time taken to fill the tank through a pipe at a rate of 112 m³ of water

per minute is 22 minutes. The cost of painting the curved surface area of the tank at Rs.

4 per m² is Rs. 2816.

Statement II: The curved surface area of the tank is 704 m² and the time taken by a pipe to empty the tank is 28 minutes.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
- C. If the data either in statement I alone or in statement II alone is sufficient to answer the question
- D. If the data in both statements I and II together are necessary to answer the question
- E. If the data given in both statements I and II together are not sufficient to answer the question.

6. The ratio of monthly incomes of Kapil and Vinay is 4 : 5 respectively and the ratio of their monthly savings is 1 : 2, respectively. What is the monthly expenditure of Vinay?

Statement I: The ratio of monthly income and monthly savings of Kapil is 4 : 1 respectively

Statement II: The monthly expenditure of Kapil and Vinay is equal.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
- C. If the data either in statement I alone or in statement II alone is sufficient to answer the question
- D. If the data in both statements I and II together are necessary to answer the question
- E. If the data given in both statements I and II together are not sufficient to answer the question.

7. The total number of white earphones in boxes A and B combined is 14 and the total number of black earphones in boxes A and B combined is 14 respectively. If 2 earphones are picked from box B at random, what is the probability that both of them are black?

Statement I: The ratio of the number of white and black earphones in box A is 3 : 5 and in box B is 2 : 1.

Statement II: The difference between the number of white earphones in box B and black earphones in box A is 6.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
- C. If the data either in statement I alone or in statement II alone is sufficient to answer the question
- D. If the data in both statements I and II together are necessary to answer the question
- E. If the data given in both statements I and II together are not sufficient to answer the question.

8. Vessels M and N contain 600 litres and 400 litres of mixture of oil and water respectively. It is known that the quantity of oil in vessel M is 5 times the quantity of

water in vessel N. If 20% and 25% of the quantities from vessel M and vessel N, respectively are poured into a drum, then what would be the ratio of quantity of oil and water in the drum?

Statement I : The quantity of water in vessel M is equal to the quantity of oil in vessel N.

Statement II: The average of quantity of oil and water in vessel M is 300 litres.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
- C. If the data either in statement I alone or in statement II alone is sufficient to answer the question.
- D. If the data in both statements I and II together are necessary to answer the question.
- E. If the data given in both statements I and II together are not sufficient to answer the question.

9. Tank X and tank Y contain mixture of oil and water in the ratio of 9 : 11 and 3 : 7 respectively. 'x%' of the mixture is transferred from tank X to Y and after that 'x%' of the remaining mixture is transferred from tank X to Y. If the initial quantity in tank X and Y are 500 litres and 100 litres respectively, find x.

Statement I : Final quantity of oil in tank Y is 111 litres.

Statement II : The difference between the quantities of oil transferred from tank X to tank Y in the 2 transfers was 9 litres.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question.
- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question.
- C. If the data either in statement I alone or in statement II alone is sufficient to answer the question.
- D. If the data in both statements I and II together are necessary to answer the question.
- E. If the data given in both statements I and II together are not sufficient to answer the question.

10. A file contains mark sheets of class I, II, III, IV and V students. The number of mark sheets of class II and V students was 7 and 2 respectively. If randomly 2 mark sheets are selected, what is the probability that both of them are of class IV students?

Statement I : The number of mark sheets of class III and class V students was 2 and 3

less respectively than the average of number of mark sheets of class I and IV together.

Statement II : The number of mark sheets of class II students was equal to the sum of the number of mark sheets of students of class I and III.

- A. If the data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question

- B. If the data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question.
- C. If the data either in statement I alone or in statement II alone is sufficient to answer the question.
- D. If the data in both statements I and II together are necessary to answer the question.
- E. If the data given in both statements I and II together are not sufficient to answer the question.

Answer key

1. B
2. C
3. D
4. A
5. A
6. E
7. A
8. A
9. C
10. D