



RRB JE Data Sufficiency Questions PDF

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Instructions

For the following questions answer them individually

Question 1

In this question two statements I and II are given. Study both the sentences and analyse which one is sufficient to answer the question.

Is $x=y$?

Statement I: $(x - 23)^2 = (y - 23)^2$

Statement II: $(x + y)\left(\frac{1}{x} + \frac{1}{y}\right) - 4 = 0$

- A The question can be answered by using one of the statements alone but not by the other statement alone.
- B The question can be answered by using either statement alone.
- C The question can be answered by using both the statements together.
- D The question cannot be answered even by using both the statements together.

Answer: A

Explanation:

Statement I: $(x - 23)^2 = (y - 23)^2$

$\Rightarrow x - 23 = \pm(y - 23)$

$\Rightarrow x=y$ or $x+y = 46$

Statement II: $(x + y)\left(\frac{1}{x} + \frac{1}{y}\right) - 4 = 0$

$\Rightarrow \frac{(x+y)^2}{xy} = 4$

$\Rightarrow \frac{x^2+y^2+2xy}{xy} = 4$

$\Rightarrow \frac{x^2+y^2}{xy} = 2$ or $x^2 + y^2 - 2xy = 0$

$\Rightarrow (x - y)^2 = 0$ or $x=y$

We can see that the question can be answered using statement 2 alone. Thus, A is the correct answer.

Question 2

Amongst six distinct positive integers, 13 is the highest while 5 is the lowest. What is the average of the six numbers?

Statement 1: The sum of the six numbers is 11 more than the square of an integer.

Statement 2: Exactly half of the numbers are prime and the sum of the numbers is also prime.

- A Statement 1 alone is sufficient to answer the question
- B Statement 2 alone is sufficient to answer the question
- C Statement 1 and 2 together are sufficient to answer the question
- D Both the statements together are also not sufficient to answer the question

Answer: A

Explanation:

The numbers must range from [5,13]

Since both 5 and 13 are included in the six numbers, the other 4 numbers must be among 6, 7, 8, 9, 10, 11 and 12.

Let's consider statement 1. So, the sum of the six numbers is 11 more than a perfect square. Min and Max sum of the six numbers can be 48 and 60. So the only perfect square that we should consider is 49. So, the sum of the six numbers should be $49+11 = 60$

This is only possible when the six numbers are 5, 9, 10, 11, 12, 13. Since the sum of the numbers is known, the average can be calculated.

Statement 2: So, exactly 3 of the six numbers are prime and the sum of the numbers is also prime.

Now, 5 and 13 are both prime. So, the third number should be either 7 or 11.

Let's consider 7 as the third prime.

So, the sum should be $5+7+13 + (\text{Sum of 3 composite numbers among 6, 8, 9, 10, and 12})$ or $25 + (\text{Sum of 3 composite numbers among 6, 8, 9, 10, and 12})$ prime.

But, none of the combination yields a prime sum.

Let's assume 11 is the third prime.

So, the sum should be $5+11+13 + (\text{Sum of 3 composite numbers among 6, 8, 9, 10, and 12})$ or $29 + (\text{Sum of 3 composite numbers among 6, 8, 9, 10, and 12})$ prime.

So, there are 2 possible cases when sum is prime.

(i) When the numbers are $(5+11+13+6+8+10)$ where the sum is 53, and

(ii) When the numbers are $(5+11+13+8+10+12)$ where the sum is 59

We can see that the average will be different in both the cases. So, II is not sufficient.

Thus, A is the correct answer.

Question 3

Read the following information and choose the appropriate option.

What is Ram's present age?

Statement I: 5 years ago Ram's age was twice the age of Shyam. Shyam's age was a perfect square back then and even now his age is a perfect square.

Statement II: Ram's age is 5 times the age of Mohan whose current age is the largest single digit prime number.

- A** The question can be answered by using one of the statements alone but not by the other statement alone.
- B** The question can be answered by using either statement alone.
- C** The question can be answered by using both the statements together.
- D** The question cannot be answered even by using both the statements together.

Answer: B

Explanation:

From I, the only possible age of Shyam is 9 years (Since the difference between his present age and his age 5 years ago are perfect squares with a difference of 5)

Since we know Shyam's age we can easily find the Ram's age as well. 5 years ago Ram's age was twice the age of Shyam. So Shyam's age would have been 4. Thus, Ram's age would have been 8. Thus his present age would be 13. Thus I alone is sufficient to answer the question.

From II, we know that Moan's age is 7. Thus, Ram's age would be 35.

Hence even statement II alone is sufficient. Hence the correct answer is option B.

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Question 4

Is B taller than D?

Statement 1: A is taller than B who is shorter than C.

Statement 2: C is taller than D who is taller than A.

- A** Statement 1 alone is sufficient to answer the question
- B** Statement 2 alone is sufficient to answer the question
- C** Either Statement alone is sufficient to answer the question
- D** Both Statement 1 and Statement 2 together are sufficient to answer this question
- E** Both Statement 1 and Statement 2 together are also not sufficient to answer this question

Answer: D

Explanation:

From the statements we know that the decreasing order of heights is:

$C > D > A$ and

$A > B < C$

Combining these statements we know that, $D > A > B$. So B is shorter than D.

Instructions

Each of the questions below consists of a question and two statements numbered 1 and 2 given below it. You have to decide whether the data provided in the statements are sufficient to answer the question.

Question 5

Two persons A and B are standing some distance apart and start moving towards each other. They meet after a time 't' seconds. What was the distance between them before they started moving towards each other?

Statement 1: The speeds of A and B are 'v1' and 'v2' respectively.

Statement 2: The speeds of A and B are in the ratio 2:3.

- A** If the data in statement I alone is sufficient to answer the question while the data in statement II alone is not.
- B** If the data in statement II alone is sufficient to answer the question while the data in statement I alone is not.
- C** If the data in both the statements together is sufficient to answer the question.
- D** If the data in either statement alone is sufficient.
- E** If the data even in both statements together is not sufficient to answer the question.

Answer: A

Explanation:

From statement 1 we know that their speeds are v_1 and v_2 . So the distance will be $(v_1 + v_2) \cdot t$.

From the second statement we only know the ratio of the speeds and without the absolute values we cannot compute the distance between them.

Question 6

Is $x(y+2)$ an odd number, where x and y are distinct integers?

Statement I: x and y are prime numbers

Statement II: $y > 11$

- A** If the data in statement I alone is sufficient to answer the question while the data in statement II alone is not.
- B** If the data in statement II alone is sufficient to answer the question while the data in statement I alone is not.
- C** If the data in both the statements together is sufficient to answer the question.
- D** If the data in either statement alone is sufficient.
- E** If the data even in both statements together is not sufficient to answer the question.

Answer: E

Explanation:

$x(y+2)$

I: x and y are prime.

So, if any of x and y is 2, $x(y+2)$ is a even number. While, when both are odd $x(y+2)$ is also odd.

II: $y > 11$

This is clearly not sufficient as even y will yield even number and odd x and y will yield odd number.

Using I and II together:

So, $x=2$ then the number is even, and when x is odd prime number, the number is odd.

Thus, the question cannot be answered even by using both statements together.

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Question 7

In the decimal representation of a , where $0 < a < 1$, is the digit in tenths place a non-zero number?

Statement I: $16a$ is an integer

Statement II: $32a$ is an integer

- A If the data in statement I alone is sufficient to answer the question while the data in statement II alone is not.
- B If the data in statement II alone is sufficient to answer the question while the data in statement I alone is not.
- C If the data in both the statements together is sufficient to answer the question.
- D If the data in either statement alone is sufficient.
- E If the data even in both statements together is not sufficient to answer the question.

Answer: E

Explanation:

I: If $16a$ is an integer, a can be $1/2, 1/4, 1/8, 1/16$ or $0.5, 0.25, 0.125, 0.0625$

Thus, from this statement, we can't infer that the tenth decimal digit is non-zero.

II: If $32a$ is an integer, a can be $1/2, 1/4, 1/8, 1/16, 1/32$ or $0.5, 0.25, 0.125, 0.0625, 0.03125$

Thus, from this statement, we can't infer that the tenth decimal digit is non-zero.

If both statements are used, we can infer that ' a ' is one among $0.5, 0.25, 0.125, 0.0625$.

But, even then we can't conclude that the tenth decimal digit is non-zero since 0.0625 has 0 as tenth decimal digit.

Thus, the answer is E.

Question 8

In a school 40% of the students in 12th standard are in Commerce stream and the rest in Science stream. If 20% of the students in Science stream are females, what is the percentage of males in the commerce stream?

Statement I. The number of females in the Science stream is 36 less than the number of boys

Statement II. forty-percent of all students in 12th standard are females

- A if the data in statement I alone is sufficient to answer the question while the data in statement II alone is not.
- B if the data in statement II alone is sufficient to answer the question while the data in statement I alone is not.
- C if the data in both the statements together is sufficient to answer the question.
- D if the data in either statement alone is sufficient.
- E if the data even in both statements together is not sufficient to answer the question.

Answer: B

Explanation:

Let the total number of students in 12th standard be x . Then total students in Commerce = $.4x$ and students in Science = $.6x$

Number of females in the Science stream = $.6x \times 2 = .12x$ Thus, no. of males in the Science stream = $.48x$

From Statement I, $.48x - .12x = 36$

$\Rightarrow .36x = 36$. Thus, $x = 100$. From this we cannot find the percentage of males in Commerce stream.

From statement II, Total girls in 12th = $.4x$

Thus, total girls in Commerce stream = $.4x - .12x = .28x$

Thus, total males in Commerce stream = Total students in Commerce - girls in Commerce = $.4x - .28x = .12x$

From this we can find the percent of male students in Commerce. Thus, B alone is enough to answer the given question.

Question 9

Is the positive integer X divisible by 12?

Statement I. When X is divided by 16 the remainder is 4

Statement II. When X is divided by 18 the remainder 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.
- B** if the data in statement II alone is sufficient to answer the question while the data in statement I alone is not.
- C** if the data in both the statements together is sufficient to answer the question.
- D** if the data in either statement alone is sufficient.
- E** if the data even in both statements together is not sufficient to answer the question.

Answer: C

Explanation:

We have to find whether the given statements are enough to find whether X is divisible by 12 i.e. X is divisible by both 3 and 4.

From statement I, X is of the form $16m + 4$. $16m + 4$ is divisible by 4 but we cannot know whether X is divisible by 3 or not. Thus, statement I alone is not sufficient to answer the given question.

From statement II, X is of the form $18k + 6$. $18k + 6$ is divisible by 3 but we cannot know whether X is divisible by 4 or not. Thus, statement II alone is not sufficient to answer the given question.

If we combine both the statements we find that X is divisible by both 3 and 4. Thus, both statements together can answer if X is divisible by 12. Thus, C is the right choice.

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Instructions

For the following questions answer them individually

Question 10

6 friends A, B, C, D, E, F are standing in a straight line according to their heights. (The tallest person is standing at the first position and shortest is at 6th position). Who is the shortest among the six?

I A is taller than B, who in turn is taller than C and E

II E is three places behind B and 1 place ahead of F

- A** If only statement I is sufficient to answer the question.
- B** If only statement II is sufficient to answer the question.
- C** If either of the statement taken alone is sufficient.
- D** If question cannot be answered using both the statements.
- E** If both the statements are required to answer the question.

Answer: E

Explanation:

From statement I alone, we cannot determine the position of anyone.

From statement II alone, we can infer some structure, but still we can't conclude who is the shortest.

But if combine both the statements, then from statement II, we can be sure that B is either at 1st position or at 2nd position. But from statement I, the possibility of B being at the first position can be ruled out. Hence B stands at 2nd position. So C is at fifth and F is at 6th.

Hence if we combine both the statements together, then we can answer the given question.

Instructions

Each of the questions below consists of a question and two statements numbered 1 and 2 given below it. You have to

decide whether the data provided in the statements are sufficient to answer the question.

Question 11

N is 2 digit number such that it has an odd number of factors. What is the sum of the digits of N?

Statement I. The sum of the digits is not divisible by 3

Statement II. The sum of the digits is even

- A** If the data in statement I alone is sufficient to answer the question while the data in statement II alone is not.
- B** If the data in statement II alone is sufficient to answer the question while the data in statement I alone is not.
- C** If the data in both the statements together is sufficient to answer the question.
- D** If the data in either statement alone is sufficient.
- E** If the data even in both statements together is not sufficient to answer the question.

Answer: B

Explanation:

We are given that N is a two digit number having odd number of factors.

So we can say that N is a perfect square.

2 digit perfect squares are 16, 25, 36, 49, 64, 81

The sum of the digits of these numbers is as follow

16 - 7

25 - 7

36 - 9

49 - 13

64 - 10

81 - 9

From statement I we can rule out 9 but we still have 4 possibilities left. Hence we cannot answer the question from statement I alone.

From statement II, we know that the sum of the digits is even. There's only one sum which is even. i.e 10 Hence from we cannot answer the question using statement II alone.

Instructions

For the following questions answer them individually

Question 12

In a class of some students, 22 play harmonica, 30 play keyboard, and 28 play guitar. How many students play all the three instruments?

Statement I: The number of students who play exactly two instruments is 6

Statement II: The total number of students in the class is 150% more than the number of students who play guitar

- A** The question can be answered using only statement I alone or only statement II alone.
- B** The question can be answered using either statement alone.
- C** The question can be answered only by using both statements together.
- D** The question cannot be answered even by using both statements together.

Answer: D

Explanation:

The number of students who don't play any instrument has not been mentioned in the question or in the two statements. Without it, the number of students who play all the three instruments cannot be found out. Thus, the answer is D.

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Question 13

Is $x = y$?

Statement 1: $x+3y+4z = 80$

Statement 2: $3x+2y+5z = 100$

- A Statement 1 alone is sufficient to answer the question while Statement 2 alone is not
- B Statement 2 alone is sufficient to answer the question while Statement 1 alone is not
- C Both the statements together are sufficient to answer the question
- D Both the statements together are also not sufficient to answer the question

Answer: C

Explanation:

To find the relation between x and y we first have to eliminate z .

Multiplying the equation from Statement 1 by 5 we get,

$$5x+15y+20z = 400 \text{ ---- (1)}$$

Multiplying the equation from Statement 2 by 4 we get,

$$12x+8y+20z = 400 \text{ ---- (2)}$$

Subtracting equation (1) from (2) we get, $x = y$.

Question 14

Two persons start running simultaneously around a circular track from the same point, at the same time and in the same direction. What is the ratio of speeds of the faster runner to that of the slower one?

I. The length of the track is 450m

II. When they met for the sixth time after starting the race, the slower person covered a distance of 3700m

- A The question can be answered by using statement I alone or using statement II alone
- B The question can be answered by using either statement alone.
- C The question can be answered only by using both statements together.
- D The question cannot be answered even by using both statements together.

Answer: C

Explanation:

Let a m/s be the speed of the faster person and b m/s be the speed of the slower person

In statement I, only the length of the track is given. We cannot find the ratio of their speeds from this information alone.

In statement II, the distance travelled by the slower person is given but not the distance of the faster person. Thus, again we cannot find the ratio of their speeds from this information alone.

If we combine both information we get, the length of track is 450m and distance travelled by the slower person after six meetings as 3700m.

When the two people meet for the first time, the faster one travels extra distance equal to the length of the track.

Thus, the distance travelled by the faster persons after six meetings = $3700 + 450 \times 6 = 6400$ m

Thus, in equal time the faster one and the slower one travels 6400m and 3700m respectively.

Thus, the ratio of their speeds = $6400/3700 = 64 : 37$

Thus, the question can be answered if we combine both the statements together.

Question 15

A banker's salary is the sum of his fixed income and performance bonus. Did the banker's fixed income account for more than 50% of his salary?

Statement 1: Had the amount of performance bonus been 30% more, then his salary would have been 10% higher.

Statement 2: The difference between his fixed income and performance bonus is half that of his fixed income.

- A Statement 1 alone is sufficient to answer the question but Statement 2 alone is not sufficient.
- B Statement 2 alone is sufficient to answer the question but Statement 1 alone is not sufficient.
- C Both the statements together are necessary to answer the question.
- D Both the statements combined are also not sufficient to answer the question.

Answer: A

Explanation:

Let the fixed income be I, performance bonus be B and the total salary be S.

$$S = I + B$$

From Statement 1 we know that, $I + \frac{13B}{10} = \frac{11S}{10}$

$$\Rightarrow \frac{10I}{11} + \frac{13B}{11} = S = B + I$$

$$\Rightarrow 2B = I$$

From this we can say that the banker's fixed income accounted for more than 50% of his salary. Hence the question can be answered using Statement 1 alone.

From Statement 2 we just know that the difference between his fixed income and performance bonus is half that of his fixed income but we do not know which one is higher. The answer to the question asked differs depending on which is higher. So it cannot be answered using Statement 2 alone.

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Question 16

Is $x^3 > x$?

Statement 1: $x^2 > x$

Statement 2: $x < 0$

- A Either of the statements is sufficient to answer the question
- B One of the statements alone is sufficient to answer the question but the other is not
- C Both the statements together are only sufficient to answer the question
- D Even both statements together is not sufficient to answer the question

Answer: D

Explanation:

According to Statement 1, either $x < 0$ or $x > 1$. When x belongs to $(-1, 0)$ $x^3 > x$ and when $x < -1$ $x^3 < x$.

According to Statement 2, $x < 0$. Again we can use the same above example. So Statement 2 is not sufficient.

Hence both the statements together are also not sufficient to answer the question.

Question 17

How many people in city A eat pizza if all the people in city A eat either pizza or burger but not both.

Statement 1: 75% of the 10000 people of city A eat burger

Statement 2: 6500 people of city A eat burger

- A** Only Statement 1 alone is sufficient to answer the question
- B** Only Statement 2 alone is sufficient to answer the question
- C** Either of the statements alone is sufficient to answer the question
- D** Only both the statements together are sufficient to answer the question

Answer: A

Explanation:

Using Statement 1 we can answer the number of people who eat pizza as we know the total population and also the number of people who eat burger.

But in Statement 2 the total population of City A is not given and is thus not sufficient to answer the question.

Hence Statement 1 alone is sufficient to answer the question.

Question 18

Two persons start running simultaneously around a circular track from the same point, at the same time and in the same direction. What is the ratio of speeds of the faster runner to that of the slower one?

I. The length of the track is 450m

II. When they met for the sixth time after starting the race, the slower person covered a distance of 3700m

- A** The question can be answered by using statement I alone or using statement II alone
- B** The question can be answered by using either statement alone.
- C** The question can be answered only by using both statements together.
- D** The question cannot be answered even by using both statements together.

Answer: C

Explanation:

Let a m/s be the speed of the faster person and b m/s be the speed of the slower person

In statement I, only the length of the track is given. We cannot find the ratio of their speeds from this information alone.

In statement II, the distance travelled by the slower person is given but not the distance of the faster person. Thus, again we cannot find the ratio of their speeds from this information alone.

If we combine both information we get, the length of track is 450m and distance travelled by the slower person after six meetings as 3700m.

When the two people meet for the first time, the faster one travels extra distance equal to the length of the track.

Thus, the distance travelled by the faster persons after six meetings = $3700 + 450 \times 6 = 6400\text{m}$

Thus, in equal time the faster one and the slower one travels 6400m and 3700m respectively.

Thus, the ratio of their speeds = $6400/3700 = 64 : 37$

Thus, the question can be answered if we combine both the statements together.

RRB Group-D Previous Papers

Question 19

A banker's salary is the sum of his fixed income and performance bonus. Did the banker's fixed income account for more than 50% of his salary?

Statement 1: Had the amount of performance bonus been 30% more, then his salary would have been 10% higher.

Statement 2: The difference between his fixed income and performance bonus is half that of his fixed income.

- A** Statement 1 alone is sufficient to answer the question but Statement 2 alone is not sufficient.

- B** Statement 2 alone is sufficient to answer the question but Statement 1 alone is not sufficient.
- C** Both the statements together are necessary to answer the question.
- D** Both the statements combined are also not sufficient to answer the question.

Answer: A

Explanation:

Let the fixed income be I, performance bonus be B and the total salary be S.

$$S = I + B$$

From Statement 1 we know that, $I + \frac{13B}{10} = \frac{11S}{10}$

$$\Rightarrow \frac{10I}{11} + \frac{13B}{11} = S = B + I$$

$$\Rightarrow 2B = I$$

From this we can say that the banker's fixed income accounted for more than 50% of his salary. Hence the question can be answered using Statement 1 alone.

From Statement 2 we just know that the difference between his fixed income and performance bonus is half that of his fixed income but we do not know which one is higher. The answer to the question asked differs depending on which is higher. So it cannot be answered using Statement 2 alone.

Question 20

Is $x^3 > x$?

Statement 1: $x^2 > x$

Statement 2: $x < 0$

- A** Either of the statements is sufficient to answer the question
- B** One of the statements alone is sufficient to answer the question but the other is not
- C** Both the statements together are only sufficient to answer the question
- D** Even both statements together is not sufficient to answer the question

Answer: D

Explanation:

According to Statement 1, either $x < 0$ or $x > 1$. When x belongs to $(-1, 0)$ $x^3 > x$ and when $x < -1$ $x^3 < x$.

According to Statement 2, $x < 0$. Again we can use the same above example. So Statement 2 is not sufficient.

Hence both the statements together are also not sufficient to answer the question.

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