Data Sufficiency Questions for RBI Grade B, SBIPO and IBPSPO Exams

Data Sufficiency Quiz 4

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

1. A surveyor draw three parallel straight lines on a Paper for a land survey. Two points P1 and P2 are marked on the first straight line, points P3 and P4 are marked on the second straight line and points P5 and P6 are marked on the third straight line. Each of these six points can move to any positions on its respective straight line.

Statement I: The maximum number of triangle that can be drawn by joining these points is 18.

Statement II: The minimum number of triangles that can be drawn by joining these points is zero.

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

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

C. The data in statements I alone or in statement II alone is sufficient to answer the question.

D. The data in both the statements I and II is not sufficient to answer the question.

E. The data in both the statements I and II together is necessary to answer the question.

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2. Prem and Ramesh started from two cities Patna and Allahabad respectively, traveling at constant speeds, to reach Allahabad and Patna respectively. At what time will they meet?

Statement I: The distance between Patna and Allahabad is 250 km. Prem travels at 50 km/hr and Ramesh travels at 25 km/hr.

Statement II: Prem started from Patna at 5:00 a.m. and reached Allahabad at 11:00 a.m. Ramesh started from Allahabad at 7:00 a.m. and reached Patna at 3.00 p.m.

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

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

C. The data in statements I alone or in statement II alone is sufficient to answer the question.

D. The data in both the statements I and II is not sufficient to answer the question.

E. The data in both the statements I and II together is necessary to answer the question.

3. Ganpat is a oil trader, he mixes two varieties of oil in the ratio of 1 : 4. By selling the mixture at 14.40 per kg he gets a profit of more than 20%. Is the cost of the dearer variety, which is mixed, more than 20 per kg?

Statement I: The cost of the cheaper variety of oil mixed is 10 per kg.

Statement II: For every 1 kg of the cheaper variety of oil he mixed 4 kg of the dearer variety of oil.

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

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

C. The data in statements I alone or in statement II alone is sufficient to answer the question.

D. The data in both the statements I and II is not sufficient to answer the question.

E. The data in both the statements I and II together is necessary to answer the question.

4. During a three-years period, viz. 2010, 2011 and 2012. The profits of Bharti Airtel changed by what percent from the 2011 to 2012?

Statement I: The increase in profits of Bharti Airtel from the year 2010 to the year 2011 was the same as the increase from the year 2010 to the year 2012.

Statement II: For Bharti Airtel the profits for the year 2010 were Rs. 13000 crore and the profits for the year 2012 were Rs. 14000 crore.

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

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

C. The data in statements I alone or in statement II alone is sufficient to answer the question.

D. The data in both the statements I and II is not sufficient to answer the question.

E. The data in both the statements I and II together is necessary to answer the question.

5. **Is Lionel Messi older than Luka Modric, if both of them are at least 1 year old?**

Statement I: Four times Lionel Messi's age is 4 years less than thrice Luka Modric's age.

Statement II: Five times Lionel Messi's age is one more than four times Luka Modric's age.

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

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

C. The data in statements I alone or in statement II alone is sufficient to answer the question.

D. The data in both the statements I and II is not sufficient to answer the question.

E. The data in both the statements I and II together is necessary to answer the question.

6. **In a certain company, hours worked by each personnel in excess of 40 hours per week are overtime hours and are paid for at 1 1/2 times the personnel's regular hourly pay rate. If an personnel worked a total of 42 hours last week, how much was the personnel's gross pay for the hours worked last week?**

Statement I: The personnel's gross pay for overtime hours worked last week was $30.

Statement II: The personnel's gross pay for all hours worked last week was $30 more than for the previous week.

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

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

C. The data in statements I alone or in statement II alone is sufficient to answer the question.

D. The data in both the statements I and II is not sufficient to answer the question.

E. The data in both the statements I and II together is necessary to answer the question.

7. In the quilting pattern shown above, a small square has its vertices on the sides of a larger square. What is the side length, in centimeters, of the larger square?

Statement I: The side length of the smaller square is 10 cm.

Statement II: Each vertex of the small square cuts 1 side of the larger square into 2 segments with lengths in the ratio of 1 : 2.

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

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

C. The data in statements I alone or in statement II alone is sufficient to answer the question.

D. The data in both the statements I and II is not sufficient to answer the question.

E. The data in both the statements I and II together is necessary to answer the question.

8. On the scale drawing of a certain house plan, if 1 centimeter represents x meters, what is the value of x ?

Statement I: A rectangular room that has a floor area of 12 square meters is represented by a region of area 48 square centimeters.

Statement II: The 15-meter length of the house is represented by a segment 30 centimeters long.

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

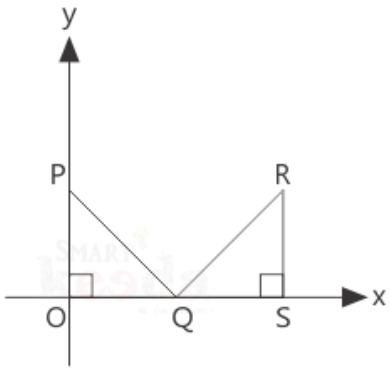
B. The data in statements II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question.

C. The data in statements I alone or in statement II alone is sufficient to answer the question.

D. The data in both the statements I and II is not sufficient to answer the question.

E. The data in both the statements I and II together is necessary to answer the question.

9. In the rectangular coordinate system above, if ΔOPQ and ΔQRS have equal area, what are the coordinates of point R?



Statement I: The coordinates of point P are (0, 12).

Statement II: OP = OQ and QS = RS.

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

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

C. The data in statements I alone or in statement II alone is sufficient to answer the question.

D. The data in both the statements I and II is not sufficient to answer the question.

E. The data in both the statements I and II together is necessary to answer the question.

10. During a certain bicycle ride, was Sherry's average speed faster than 24 kilometers per hour ? (1 kilometer = 1,000 meters)

Statement I: Sherry's average speed during the bicycle ride was faster than 7 meters per second.

Statement II: Sherry's average speed during the bicycle ride was slower than 8 meters per second.

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

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

C. The data in statements I alone or in statement II alone is sufficient to answer the question.

D. The data in both the statements I and II is not sufficient to answer the question.

E. The data in both the statements I and II together is necessary to answer the question.

Correct Answers:

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

Explanations:

1. The maximum triangles would be in case all these 6 points are non-collinear. In such a case the number of triangles is ${}^6C_3$

$= \frac{6 \times 5 \times 4}{1 \times 2 \times 3} = 20$

Hence, statement I is incorrect.

In other case if surveyor take the position that P1 and P2 coincide on the first straight line, P3 and P4 coincide on the second straight line, P5 and P6 coincide on the third straight line and all these coincidences happen at 3 points which are on the same straight line in such a case there would be 0 triangles formed.

Hence, statement II is correct.

Therefore, option (B) is correct.

2. **From statement I:**
It is not given whether both start simultaneously or not.
Also no time is given which we can use as reference for finding the meeting point.
So, statement I alone is not sufficient to answer the question.

From statement II:
Prem and Ramesh take 6 hours and 8 hours respectively to cover Patna to Allahabad (say 'S')

So, Prem's speed = $\frac{S}{6}$km/hr

And, Ramesh's speed = $\frac{S}{8}$km/hr

By, 7:00 a.m. Prem would have covered $\frac{S}{3}$km

The time when both will meet $= \frac{S - \frac{S}{3}}{\frac{S}{6} + \frac{S}{8}}$hr $= \frac{2 \times \frac{S}{3}}{\frac{14S}{48}} = \frac{2 \times 48}{3 \times 14} = 2.285$ hr

Hence, statement II alone is sufficient to answer the question.

Therefore, option (B) is correct.

3.

The cost price of the mixture is less than $\frac{14.40}{120} \times 100$ = Rs.12 Per Kg.

From Statement I:

The quantities of cheaper to dearer could be 1 : 4 or 4 : 1

Case I: Consider 1 : 4

So, x kg of the cheaper is mixed with 4x kg of the dearer.

Let the cost of the dearer variety be Rs. k per kg.

Then, $\frac{10x + 4kx}{x + 4x} < 12$

$\Rightarrow 4k + 10 < 60$

$\Rightarrow 4k < 50$

$\Rightarrow k < 12.5$

Case II: Consider 4 : 1,

So, 4x kg of the cheaper in mixed with x kg of the dearer

$\frac{kx + 40x}{x + 4x} < 12$

$\Rightarrow k + 40 < 60$

$\Rightarrow k < 20$

So, in either case, the dearer variety costs less than Rs. 20 per kg.

Hence, statement I alone is sufficient to answer the question.

From statement II:

Let the cost of the cheaper variety be Rs. y and dearer variety be Rs. z per kg

Let the quantities of the cheaper and dearer varieties be x and 4x respectively

Given, $\frac{yx + 4zx}{5x} < 12$

$\Rightarrow y + 4z < 60$

Since, $y > 0 \Rightarrow 4z < 60 \Rightarrow z < 15$

So, the dearer variety costs less than Rs. 20 per kg.

Hence, statement II alone is sufficient to answer the question.

Therefore, option (C) is correct.

4. **From Statement I:**

The increase in profits was the same from year 2010 to 2011 as from year 2010 to 2012. This statement is a tricky statement that most people under-leverage. At first moment after watching, it appears insufficient but a careful analysis shows that this information proves that there was no change from year 2011 to year 2012. The only way that the change could be the same from year 2010 to the year 2011 as from year 2010 to year 2012 is with a zero percentage change from year 2011 to year 2012.

So, statement I alone is sufficient to answer the question.

From Statement II:

The profits in year 2010 were Rs. 13000 crore and in year 2012 were Rs. 14000 crore.
So, the increase in profits from year 2010 to 2012 = (14000 – 13000) = 1000 crore
We can calculate the percentage gain from year 2010 to year 2012.
But it is not possible to know how much of this increase occurred between year 2010 to 2011 versus year 2011 to 2012.

So, statement II alone is not sufficient to answer the question.
Hence, option (A) is correct.

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5. Let Lionel Messi's age be A years and Luka Modric's age be B years.

Statement I :

$4A = 3B - 4$

$\Rightarrow 4A + 4 = 3B$

$\Rightarrow 4(A + 1) = 3B$

$\Rightarrow B = \frac{4}{3}(A + 1)$

$\Rightarrow B > A$ (1) is sufficient

Statement II :

$5A = 4B + 1$

$\Rightarrow A = 0.8B + 0.2$

If $B = 1$ then $A = 1$ i.e., $B = A$. If $B > 1$ then $A < B$

$\therefore$ In either case, A is not greater than B (2) is sufficient

Hence, option (C) is correct.

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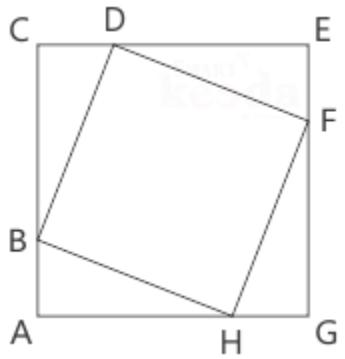
6. If an personnel's regular hourly rate was $R and the personnel worked 42 hours last week, then the personnels' gross pay for hours worked last week was 40 R + 2 (1.5R). Determine the value of 40 R + 2 (1.5 R) = 43 R, or equivalently, the value of R.

(1) Given that the personnel's gross pay for overtime hours worked last week was $30, it follows that 2 (1.5R) = 30 and R = 10; **(SUFFICIENT)**

(2) Given that the personnel's gross pay for all hours worked last week was $ 30 more than for the previous week, the value of R cannot be determined because nothing specific is known about the value of the personnel's pay for all hours worked the previous week; **(NOT SUFFICIENT)**.

Hence, option (A) is correct.

7.



Determine the side length of the larger square or, in the figure above, determine AG = AH + HG. Note that ΔBAH, ΔDCB, ΔFED, and ΔHGF are the same size and shape and that AB = CD = EF = GH and BC = DE = FG = HA.

(1) This indicates that HF = 10, but it is possible that HG = 6 and GF = 8 ($\sqrt{6^2 + 8^2}$= 10), from which it follows that the side length of the larger square is 6 + 8 = 14, and it is possible that

HG = 1 and GF = 99 ($\sqrt{1^2\left(\sqrt{99}\right)^2}$ = 10)

, from which it follows that the side length of the larger square is 1 + $\sqrt{99}$; **(NOT sufficient.)**
(2) This indicates that if HG = x, then AH = 2x. If x = 2, then the side length of the larger square is 2 + 2 (2) = 6, but if x = 5, then the side length of the larger square is 5 + 2 (5) = 15, (**NOT sufficient.**)

Taking (1) and (2) together, $10 = x^2 + (2x)^2$, which can be solved for x. Then taking 3 times the value of x gives the side length of the larger square.
Hence, option (C) is correct.

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8. It is given that on the scale drawing, 1 centimeter represents x meters. Determine the value of x. Note that 1 cm^2 represents x^2 m^2.
(I) This indicates that an area of 12 m^2 is represented by an area of 48 cm_2. Then dividing both 12 and 48 by 48, it follows

that an area of $\frac{12}{48} = \frac{1}{4}$ m^2 is represented

by an area of $\frac{48}{48}$ = 1 cm^2 and so $x^2 = \frac{1}{4}$ or

$x = \frac{1}{2}$; SUFFICIENT.

(II) This indicates that a length of 15 m is represented by a length of 30 cm. Then, dividing both 15 and 30 by 30, it follows

that a length of $\frac{15}{30} = \frac{1}{2}$ m is represented

by a length of $\frac{30}{30}$ = 1 cm and so $x = \frac{1}{2}$; SUFFICIENT.

Hence, option (C) is correct.

9. Since, the area of ΔOPQ is equal to the area of ΔQRS, if follows that
$\frac{1}{2}$ (OQ) (OP) = $\frac{1}{2}$ (QS) (SR), or (OQ) (OP) = (QS) (SR),

Also, if both OS and SR are known then the coordinates of point R will be known.

(I) Given that the y - coordinate of P is 12, it is not possible to determine the coordinates of point R. For example, if OQ = QS = SR = 12, then the equation (OQ) (OP) = (QS) (SR) becomes (12) (12) = (12) (12), which is true, and the x - coordinate of R is OQ + QS = 24 and the y - coordinate of R is SR = 12. However, if OQ = 12, QS = 24, and SR = 6, then the equation (OQ) (OP) = (QS) (SR) becomes (12) (12) = (24) (6), which is true, and the x - coordinate of R is OQ + QS = 36 and the y - coordinate of R is SR = 6; NOT sufficient.

(II) Given that OP = OQ and WS = RS, it is not possible to determine the coordinates of point R, since everything given would still be true if all the lengths were doubled, but doing this would change the coordinates of point R ; NOT sufficient.

Taking (1) and (2) together, it follows
that OP = OQ = 12. Therefore, (OQ) (OP) = (QS) (SR) becomes (12) (12) = (QS) (SR), or 144 = (QS) (SR). Using QS = RS in the last equation gives 144 = $(QS)^2$, or 12 = QS. Thus, OQ = QS = SR = 12 and point R has coordinates (24, 12).

Hence, option (E) is correct.

10. This problem can be solved by coverting 24 kilometers per hour into meters per second. First, 24 kilometers is equivalent to 24,000 meters and 1 hour is equivalent to 3,600 seconds. Then, travelling 24 kilometers in 1 hour is equivalent to travelling 24,000 meters in 3,600 seconds, or

$\frac{24{,}000}{3{,}600} = 6\frac{2}{3}$ meters per second

(I) This indicates that Sherry's average speed was faster than 7 meters per second,
which is faster than $6\frac{2}{3}$ meters per second

and, therefore, faster than 24 kilometers per hour, SUFFICIENT.

(II) This indicates that Sherr'ys average speed was slower than 8 meters per second. Her average speed could have been 7 meters per second (since 7 < 8), in which case her
average speed was faster than $6\frac{2}{3}$ meters per second

and, therefore, faster than 24 kilometers per hour. Or her average speed could have been 5 meters per second (since 5 < 8), in which case her average

speed was not faster than $6\frac{2}{3}$ meters per second

and, therefore, not faster than 24 kilometers per hour; NOT sufficient.
Hence, option (A) is correct.