Data Sufficiency for SBI PO Mains 2025

Q1. Riya has an amount of Rs 6X and she invested 1/3rd of amount in two different schemes A and B in the ratio of 1 : 7 respectively. From remaining, she paid Rs 2100 to her maid and remaining Rs P he invested in post office. If X : P = 3 : 5, then which of the following statement/s is or are correct?

I. Amount invested in scheme B is more than the amount invested in post office.
II. Amount spend on maid is more than the amount spend on scheme A
III. Amount invested in scheme B equal to Amount spend on maid
(a) All I, II and III
(b) Both I and II
(c) Only I
(d) Only III
(e) Both I and III

Q2. There is a right cylindrical vessel filled 75% of its capacity, which is equal to _____ cm^3. The breadth of a rectangle is 10 cm more than the height and length of the rectangle is 4 cm more than the radius of the cylindrical vessel. The curved surface area of the cylindrical vessel is ___ cm^2. Find which of the following value/s is or are come in the blank place. (Note: The curved surface area of the cylindrical vessel is greater than twice the area of the rectangle)

I. 1155, 440
II. 3696, 704
III. 1386, 528
(a) All I, II and III
(b) Only I and II
(c) Only I
(d) Only III
(e) Both II and III

Q3. A man has two articles A and B, to find the selling price of article B which statement or statements is/are required to answer the question.

A. Total amount received by man after selling six article A and four article B is Rs.240, Form this total amount either man could buy nine article A & four article B or three article A and eight article B.
B. The ratio of profit percent on selling article A and article B is same.
C. Total profit earned on selling one article B is Rs. 6 and profit percentage on selling one article A is 25%. The selling price and the cost price of article B are Rs.10 and Rs.8 more than that of article A respectively.
(a) Either A and B together or B and C together are sufficient to answer the question
(b) Either A and B together or C alone is sufficient to answer the question
(c) Either A and C together or B and C together are sufficient to answer the question
(d) A, B and C together are sufficient to answer the question
(e) Either only B or A and C together are sufficient to answer the question

Q4. The question is followed by three statements I, II and III. You have to determine which statement or statements (s) is/are sufficient/necessary to answer the question and mark answer accordingly.

The slant height of a cone is x cm. If side of a square is (x+5) cm, then find the area of the square.

I. The ratio of diameter of cone to its height is 3 : 2.

II. The base and height of a cylinder is same as base and height of the cone respectively. Volume of the cylinder is 4500π cm^3.

III. Total surface area of the cone is 600π cm^2 and curved surface area of the cone is 375π cm^2.

(a) Statement II and III together sufficient to answer the question

(b) Statement III alone is sufficient to answer the question

(c) All the three statements taken together are necessary to answer the question

(d) Statement I and II together sufficient but III alone not sufficient

(e) Either statement I and II together or statement III alone is sufficient to answer the question.

Q5. Two containers A and B contains mixture of milk and water. Container A contains milk & water in the ratio of 3:5 and milk in container B is 75%. The total quantity of mixture in container A to B is 500x liters & 400y liters. If mixture A is mixed with mixture B, then which statement (s) is/are sufficient/necessary to find the total quantity of container A (in liters).

I. The sum of quantity of milk in container A and B is 195 liters.

II. The quantity of water in container A is 85 liters more than that of B.

(a) Either (I) alone or (II) alone

(b) Only (I)

(c) Only (II)

(d) Both (I) and (II)

(e) None of them

Directions (6-7): The following questions are accompanied by two statements i.e. statement (I) and statement (II). You have to determine which statement (s) is/are sufficient/necessary to answer the questions.

Q6. The ratio of the age of P to Q and Q to R is 4:5 and 3:2 respectively. Find the age of Q after ten years.

Statement I. The difference between the age of R and P after ten years is equal to the difference between the age of P and Q after ten years.

Statement II. The difference between the age of P and R is four years.

(a) Neither statement (I) nor 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.

Q7. The ratio of the cost price of two articles P to Q is 4:5, respectively. The discount allowed on each of the articles was 25%. Find the selling price of article Q.
Statement I. Article P was sold at a profit of 40%, and article Q was sold at a profit of Rs 420.
Statement II. The marked price of both the articles is the same.
(a) Neither statement (I) nor 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.

Directions (8-10): The following questions are accompanied by three statements (I), (II), and (III). You have to determine which statement(s) is/are sufficient /necessary to answer the questions.

Q8. What is speed of boat in still water?
I. Speed of stream is two-third of speed of boat in still water
II. The boat covers 20 km in 2 hours in downstream
III. The boat covers 10 km in 5 hours in upstream.
(a) only statement II is sufficient
(b) Any two are sufficient
(c) I and II or III are sufficient
(d) Only statement III is sufficient
(e) None of these

Q9. What was the amount of profit earned?
I. If no discount is given, profit would be 40%
II. 30% discount is offered on marked price.
III. Selling price is more than cost price by 40%.
(a) Only III
(b) All I, II and III
(c) Only II and III
(d) Cannot be answered even including all statement
(e) Only I and III

Q10. What is speed of train?
I. The train crosses 300 m long platform in 45 seconds.
II. The train crosses another stationary train of same length in 60 seconds.
III. The train crosses a single pole in 30 seconds.
(a) I and II or III
(b) Only I
(c) II and III both
(d) Only III
(e) I and II both

Solutions

S1. Ans.(b)

Sol.

Amount invested in scheme A and B together = 6X/3 = 2X

Amount invested in post office = $(6X - 2X) - 2100 = P$

= 4X – 2100 = P

Given, X : P=3:5

Let X and P be 3a and 5a respectively

4(3a) - 2100 = 5a

12a - 5a = 2100

a = 300

X = 3a = 900

P = 5a = 1500

So, Amount invested in scheme A and B together = 2X = 1800

Amount invested in scheme A = $1800 \times \frac{1}{8} = 225\ Rs$

Amount invested in scheme B = $1800 \times \frac{7}{8} = 1575\ Rs$

Amount invested in post office = Rs 1500

From I. Amount invested in scheme B is more than the amount invested in post office. (it is correct)

From II. Amount spend on maid is more than the amount spend on scheme A (it is correct)

III. Amount invested in scheme B is less than Amount spend on maid (it is incorrect)

So, **Both I & II**

S2. Ans.(e)

Sol. Let the height and the radius of the cylindrical vessel be h and r cm respectively.

From I. $\frac{75}{100} \times \frac{22}{7} \times r^2 \times h = 1155$

$r^2 \times h = 490 \ldots (i)$

And

$2 \times \frac{22}{7} \times r \times h = 440$

$r \times h = 70$

$h = \frac{70}{r}$

h value put in (i)

$r^2 \times \frac{70}{r} = 490$

$r = 7$ cm

And h = 70/7 = 10 cm

Breadth of the rectangle = 10 + 10 = 20 cm

Length of the rectangle = 4 + 7 = 11 cm

Area of the rectangle = 20× 11 = 220 cm^2

So, I is not possible to fill all the respective fillers

From II. $\frac{75}{100} \times \frac{22}{7} \times r^2 \times h = 3696$

$r^2 \times h = 1568 \ldots (i)$

And

$2 \times \frac{22}{7} \times r \times h = 704$

$r \times h = 112$

$h = \frac{112}{r}$

h value put in (i)

$r^2 \times \frac{112}{r} = 1568$

$r = 14$ cm

And h = 112/14 = 8 cm

Breadth of the rectangle = 10 + 8 = 18 cm

Length of the rectangle = 4 + 14 = 18 cm

Area of the rectangle = 18× 18 = 324 cm^2

So, II is possible to fill all the respective fillers

From III. $\frac{75}{100} \times \frac{22}{7} \times r^2 \times h = 1386$

$r^2 \times h = 588 \ldots (i)$

And

$2 \times \frac{22}{7} \times r \times h = 528$

$r \times h = 84$

$h = \frac{84}{r}$

h value put in (i)

$r^2 \times \frac{84}{r} = 588$

$r = 7$cm

And h = 84/7 = 12 cm

Breadth of the rectangle = 10 + 12 = 22 cm

Length of the rectangle = 4 + 7 = 11 cm

Area of the rectangle = 11× 22 = 242 cm^2

So, **III is possible to fill all the respective fillers**

S3. Ans.(b)

Sol. Let us assume selling price of article A and B is 'a' and 'b' respectively, while cost price of article A and B is x and y respectively.

From A: 6a + 4b = 240

$9x + 4y = 240$ ---- (i)

$3x + 8y = 240$ ----- (ii)

So, $x = 16, y = 24$

But we can't calculate value of a and b, so A alone not sufficient

From B: Now the ratio of profit percent on both the articles is same = 1 : 1.
From only B we cannot solve the question.
From A and B: $\frac{a-16}{16} \times 100 = \frac{b-24}{24} \times 100$
$3a - 48 = 2b - 48$
$\frac{a}{b} = \frac{2}{3}$
Let a and b be 2n and 3n respectively.
$12n + 12n = 240$
$n = 10$
So, a and b are 20 and 30 respectively.
From C:
$b - y = 6$
$a = 1.25x$
$b - a = 10$ and $y - x = 8$
So, we get $a = 20, b = 30, x = 16, y = 24$
So, **either statement A and B together or statement C alone is sufficient to answer the question.**

S4. Ans.(e)
Sol. From I: Let radius and height of cone be 'a' and 'b respectively
$2a = \frac{3}{2}b$
$b = \frac{4a}{3}$
So, data of I alone not sufficient
From II: Given, radius and height of cone be 'a' and 'b' respectively.
So, radius and height of a cylinder be 'a' and 'b' respectively.
$\pi a^2 b = 4500\pi$
$a^2 b = 4500$
So, data of II alone not sufficient
From III. $\pi ax + \pi a^2 = 600\pi$ ------ (i)
$\pi ax = 375\pi$ ------- (ii)
Subtracting (ii) from (i) we get –
$\pi a^2 = 225\pi$
$a^2 = 225$
$a = +15, -15$
$a \neq -15$
So, a = 15 cm
$\pi ax = 375\pi$
$x = \frac{375}{15} = 25$ cm
Required area = $30 \times 30 = 900$ cm^2
From I and II. $a^2 \times \frac{4a}{3} = 4500$
$4a^3 = 13500$
$a^3 = 3375$
a = 15 cm

So, b = $\frac{4\times15}{3}$ = 20 cm

x = $\sqrt{15 \times 15 + 20 \times 20}$

x = $\sqrt{625}$

x = 25 cm

Required area = $30 \times 30 = 900$ cm^2

So, **either statement I and II together or statement III alone is sufficient to answer the question.**

S5. Ans.(d)

Sol. Quantity of milk in container A = $500x \times \frac{3}{8} = 187.5x$

Quantity of water in container A =$500x - 187.5x = 312.5x$

Quantity of milk in container B =$400y \times \frac{75}{100} = 300y$

Quantity of water in container B = $400y - 300y = 100y$

From I. $187.5x + 300y = 195$

From II. 312.5x−100y = 85

From both the statements

$x = 0.4, y = 0.4$

Total quantity of container A =$500 \times 0.4 = 200$ litres

S6. Ans.(b)

Sol. Given, The ratio of the ages of P to Q and Q to R is 4:5 and 3:2 respectively

The ratio of the age of P, Q and R = 12:15:10

Let the ages of P, Q and R be 12a, 15a and 10a years respectively.

From I. 12a+10-10a-10 = 15a+10-12a-10

2a = 3a

Can't solve further

From II. 12a - 10a = 4

2a = 4

a = 2

Required age = 15a+10 = 40 years

So, only Statement II alone is sufficient to answer

S7. Ans.(d)

Sol. Let the cost price of P and Q be 4x and 5x respectively

From I. Selling price of P = $\frac{140}{100} \times 4 = 5.6x$

Selling price of Q = 5x + 420

Marked price of P = $\frac{5.6x}{75} \times 100 = \frac{112}{15}x$

Marked price of Q = $\frac{5x+420}{75} \times 100 = (5x + 420) \times \frac{4}{3}$

From II. The marked price of both the articles is the same.

Both statements together

$\frac{112}{15}x = (5x + 420) \times \frac{4}{3}$

$\frac{28x}{5} = 5x + 420$

$28x - 25x = 2100$

$x = 700$

Selling price of Q = 5x+420 =Rs 3920

So, both statements together is sufficient to answer

S8. Ans.(b)

Sol. Let speed of stream be x km/hr.

Speed of boat in still water be y km/hr.

From (I),

$x = \frac{2}{3}y$

From (II),

$x + y = \frac{20}{2} = 10\,\text{km/hr}$

From (III),

$y - x = \frac{10}{5} = 2\,\text{km/hr}$

So, any two are sufficient

S9. Ans.(d)

Sol. Cannot be answered since price is not given.

S10. Ans.(a)

Sol. Let speed of train is S_t and length of train is L_t.

From I,

$S_t = \frac{300+L_t}{45}$

From II,

$S_t = \frac{2L_t}{60}$

From III,

$S_t = \frac{L_t}{30}$

II and III are same.

∴ I and either II or III are sufficient.