

Quiz Date: 21st February 2020

Directions (1-5): The following questions are accompanied by two statements A and B. You have to determine which statements(s) is/are sufficient/necessary to answer the questions.

- (a) Statement **A** alone is sufficient to answer the question but statement **B** alone is not sufficient to answer the questions.
- (b) Statement **B** alone is sufficient to answer the question but statement **A** alone is not sufficient to answer the question.
- (c) Both the statements taken together are necessary to answer the questions, but neither of the statements alone is sufficient to answer the question.
- (d) Either statement **A** or statement **B** by itself is sufficient to answer the question.
- (e) Statements **A** and **B** taken together are not sufficient to answer the question.

Q1. An equilateral triangle is inscribed in a circle. What will be the difference between the area of circle and area of triangle?

- (A) Radius of circle is given
- (B) Sum of the perimeter of triangle and circle is given.

Q2. Is 'n' even or odd, if n is a natural number.

- (A) $2^n + 1$ is divisible by 3
- (B) $4^n - 1$ is divisible by 3

Q3. A shopkeeper gets a loss of 70 Rs. when he sold an article at 20% discount on M.P. Find cost price of Article.

- (A) % of mark up above cost price is equal to % discount given on M.P.
- (B) when no discount is given, article sold at profit of 350 Rs.

Q4. 'X' mark up an article 50% above its cost price. Find the cost price of article.

- (A) 'X' gave Rs 60 discount on mark price and earn 20% profit.
- (B) If 'X' gave two successive discounts of 10% each then he will earn Rs 43 as profit.

Q5. Amit tells truth 2 times out of x times while Ankush tells truth 5 times out of 'y' times. Find the product of 'x' and 'y'

- (A) Probability that Amit and Ankush contradict with each other on facts is 50%
- (B) Probability that both tells truth is 20%

Directions (6-10): The following questions are accompanied by two statements (I) and (II). You have to determine which statements(s) is/are sufficient/necessary to answer the questions.

- (a) Statement **(I)** alone is sufficient to answer the question but statement **(II)** alone is not sufficient to answer the questions.
- (b) Statement **(II)** alone is sufficient to answer the question but statement **(I)** alone is not sufficient to answer the question.
- (c) Both the statements taken together are necessary to answer the questions, but neither of the statements alone is sufficient to answer the question.

- (d) Either statement **(I)** or statement **(II)** is sufficient to answer the question.
 (e) Statements **(I)** and **(II)** together are not sufficient to answer the question.

Q6. Find Veer's age four years hence from present?

- (I) Ratio between Veer's age and Rahul's age, three years ago was 8 : 9, while Veer is two years younger than Rahul.
 (II) Ratio between present age of Rahul and Veer is 21: 19, while five year hence average age of Rahul and Veer will be 25 years.



Q7. What will be profit share of Ankit out of total profit?

- (I) Ankit Invest Rs. 1600 for 8 months and Satish joined him after third month with capital of Rs. 1200.
 (II) Satish got Rs. 630 as profit share.

Q8. How many men and women working on this task if efficiency of man and women is same?

- (I) $(x - 4)$ men work for first $(x - 8)$ days, after that $(x+2)$ women complete the remaining work in $(x - 8)$ days.
 (II) Ratio between work did by men to work did by women is 2 : 3.

Q9. Find the cost price of laptop if cost price of laptop on both shops is same?

- (I) Marked price of laptop on two shops A and B is same. Shops 'A' allows 20% discount and shop B allows 25% discount on laptop. A man purchased laptop from shop B, if man spend Rs. 640 more, he could purchase the same laptop from shop A.
 (II) Marked price of laptop is $52\frac{8}{21}\%$ more than its cost price on both shops. If both shopkeepers gave a discount of 30% on M.P. of laptop, he made a profit of Rs. 560.

Q10. There are some red and some blue balls in a bag. Find how many blue balls in the bag.

- (I) Total number of balls in bag is ten. If selecting two balls at random probability of being at least one ball red is $\frac{14}{15}$.
 (II) Total number of balls in bag is ten. Selecting two balls from out of total balls at random, probability of being both ball blue is $\frac{1}{15}$.

Solutions

S1. Ans.(d)

Sol.

Form A → Let radius of circle = r

Then side of equilateral $\Delta = \sqrt{3}r$

Area of equilateral triangle and circle can be find out and required difference can also be find out easily.

From B → Let radius of circle = r

⇒ side of equilateral triangle = $\sqrt{3}r$

Sum of peremeter of triangle and circle is given. By this value of 'r' can be find out and after this required difference can be find out easily. Hence, either only A or only B is sufficient to answer the question

S2. Ans.(a)

Sol.

From A → $2^n + 1$ is divisible by 3

⇒ n = 1, 3, 5, 7....

⇒ n = odd

From B) → $4^n - 1$ is divisible by 3

⇒ n = 1, 2, 3.....

⇒ 'n' can be even as well as odd

Hence, Only A is sufficient to answer the question

S3. Ans.(d)

Sol.

From A→

Discount % = 20% = Mark up%

If cost price is 100x then Markup price 120x and selling price is → 96x

So ATQ,

$$100x - 96x = 70$$

$$C. P = 100x = \frac{70}{4x} \times 100x = 1750$$

From B→

Let mark up price is → 100x

Then selling price is → 80x

ATQ,

$$100x - 80x = 350 + 70$$

$$20x = 420$$

$$100x = 2100$$

$$80x = 1680$$

$$C.P. \rightarrow 1680 + 70 = 1750$$

So Either A or B alone required.



S4. Ans.(d)

Sol.

Let CP = 200x

⇒ MP = 300x

From A → SP = 300x - 60

$$200x \times \frac{120}{100} = 300x - 60$$

$$\Rightarrow 60x = 60$$

$$\Rightarrow CP = 200x = 200$$

From B → Two successive discount

$$= 10 + 10 - \frac{10 \times 10}{100} = 19\%$$

$$S.P = 200x + 43 = 300x \times \frac{81}{100}$$

$$200x + 43 = 243x$$

$$x = 1$$

$$CP = 200x = 200$$

Hence, either alone A or alone B is sufficient to answer the question.

S5. Ans.(b)

Sol.

$$\text{Probability that Amit tells truth} = \frac{2}{x}$$

$$\text{Probability that Amit tells lie} = \frac{x-2}{x}$$

$$\text{Probability that Ankush tells truth} = \frac{5}{y}$$

$$\text{Probability that Ankush tells lie} = \frac{y-5}{y}$$

$$\text{From A} \rightarrow \frac{2}{x} \times \frac{y-5}{y} + \frac{x-2}{x} \times \frac{5}{y} = \frac{1}{2}$$

$$\text{From B} \rightarrow \frac{2}{x} \times \frac{5}{y} = \frac{1}{5}$$

$$\Rightarrow xy = 50$$

Hence only B is sufficient to answer the question.

S6. Ans.(d)

Sol. **From I,**

Let age of Veer and Rahul three years ago be $8x$ and $9x$ respectively.

ATQ

$$(9x + 3) - (8x + 3) = 2$$

$$x = 2 \text{ years}$$

Veer's age after four years

$$= (2 \times 8 + 7) = 23 \text{ years}$$

From II,

Let present age of Rahul and Veer be $21x$ and $19x$ year respectively

ATQ,

$$\frac{(21x+19x)+10}{2} = 25$$

$$40x = 50 - 10$$

$$x = 1 \text{ year}$$

Present age of Veer = 19 year

Four years hence Veer age = $19 + 4 = 23$

So, either statement I or II alone sufficient for giving the answer of the question.

S7. Ans.(e)

Sol. **From I**

Ankit Investment share = 1600 Rs.

Time on which Ankit Invest = 8 months

Satish investment share = 1200 Rs.

From II

Given, profit share of Satish = 630 Rs.

So, from both sentence we could not made answer, time period on which Satish invest his capital not given, so we could not determine profit ratio of Ankit and Satish.

S8. Ans.(c)

Sol. **From I,**

$(x - 4) \times (x - 8)$ - Men total work

$(x + 2) \times (x - 8)$ - women total work

From I and II

$$\frac{(x-4) \times (x-8)}{(x+2) - (x-8)} = \frac{2}{3}$$

$$x = 16$$

So, number of men working = $(16 - 4)$

= 12 men

Number of women working

= $(16 + 2)$

= 18 women

So, Both Statement I and II together are Sufficient to answer the question

S9. Ans.(b)

Sol. **From I,**

Let marked price of laptop on both shops = $100x$ Rs.

ATQ-

$$100x \times \frac{80}{100} = 100x \times \frac{75}{100} + 640$$

$$5x = 640$$

$$x = 128 \text{ Rs.}$$

$$\text{M.P} = 12800 \text{ Rs.}$$

From I, we could not determine the cost price of laptop.

From II

Let cost price of Laptop = $100x$ Rs.

$$\text{Marked price of laptop} = 100x + 100x \times \frac{11}{21} = \frac{3200x}{21} \text{ Rs.}$$

$$\text{S.P. of laptop} = \frac{3200x}{21} \times \frac{70}{100} = \frac{320x}{3} \text{ Rs.}$$

ATQ -

$$\frac{320x}{3} - 100x = 560$$

$$x = 560 \times \frac{3}{20} = 84$$

Cost price of laptop = Rs. 8400

Only, statement II is sufficient to give answer of the question.

S10. Ans.(d)

Sol. Let number of blue balls be x

From I

If blue balls are x

Red balls = $10 - x$

Probability at least one ball red

$$\Rightarrow \frac{{}^x C_1 {}^{10-x} C_1 + {}^{10-x} C_2}{{}^{10} C_2} = \frac{14}{15}$$

$$\frac{x(10-x) + \frac{(10-x)(9-x)}{2}}{5 \times 9} = \frac{14}{15}$$

$$\Rightarrow x^2 - x - 6 = 0$$

$$x = 3$$

From II

Blue = x

Total = 10

Probability of being both ball blue is $\frac{1}{15}$

$$\Rightarrow \frac{{}^x C_2}{{}^{10} C_2} = \frac{1}{15}$$

$$\frac{x(x-1)}{10 \times 9} = \frac{1}{15}$$

$$x^2 - x = 6$$

$$x^2 - x - 6 = 0$$

$$x = 3$$

So, either statement I or II sufficient to give the answer of the question.

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