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Mixed Maths Questions for SBI PO Pre, IBPS PO Pre, IBPS Clerk Mains and SBI Clerk Mains Exams.

Word Problems Quiz 1

Direction: Study the following questions carefully and choose the right answer.

1. A right angled triangle, whose perpendicular sides measure 1.8 cm and 2.4 cm, is inscribed in a circle. What is the circumference of the circle (in cm)?

- A. 1 B. π C. 2π D. 3π E. None of these

2. There are 52 beggars outside the temple. 312 apples are distributed among them so that each man gets 9 apples and each woman gets 5 apples. Find the number of men and women outside the temple.

- A. 13, 39 B. 39, 13 C. 14, 38 D. 26, 26 E. None of these

3. A box contains 21 balls numbered 1 to 21. A ball is drawn and then another ball is drawn without replacement. What is the probability that both balls are even numbered?

- A. $\frac{2}{7}$ B. $\frac{8}{21}$ C. $\frac{3}{14}$ D. $\frac{5}{21}$ E. None of these

4. A sum of Rs. 13360 was borrowed at $35\frac{1}{4}\%$ per annum compound interest and paid back in two years in two equal annual installments. What was the amount of each installment?

- A. Rs. 5,769 B. Rs. 7,569 C. Rs. 7,009 D. Rs. 7,500 E. None of these

5. Hardik and Pandya sold their bats at Rs. 5457 each but Hardik incurred a loss of 15%, while Pandya gained 2%. What is the ratio of the cost price of the bat of Hardik to that of Pandya?

- A. 101 : 90 B. 467 : 389 C. 738 : 797 D. 642 : 537 E. None of these

6. The marks scored by Ramnath in three subjects are in the ratio 3 : 5 : 6. Ramnath scored an overall aggregate of 70% in the exam. If the maximum marks in each subject are the same, in how many subjects did Ramnath score more than 75% marks?

- A. One B. Two C. Zero D. Can't be determined
E. None of these

7. Ady is a working and Sandy is a sleeping partner in a business. Ady puts in Rs. 20000 and Sandy puts in Rs. 30000. Ady receives 15% of the profit for managing the business, and the rest is divided in proportion to their capitals. If the total profit is Rs. 10500, then find the share of Sandy in the profit.

- A. Rs. 5355 B. Rs. 3570 C. Rs. 5000 D. Rs. 5400 E. None of these

8. A driver of a auto rickshaw sees a lorry 60 meters ahead of him. After 30 seconds the lorry is 90 meters behind. If the speed of the auto rickshaw is 38 kmph, then what is the speed of the lorry?

- A. 23 kmph B. 25 kmph C. 20 kmph D. 18 kmph E. None of these

9. The price of rice has increased by 20%. Lalu has decided to spend only 8% more than what he initially did on buying rice. What is the percentage decrease in Lalu's rice consumption?

- A. 10% B. 13% C. 18% D. 14% E. None of these

10. The sum of the ages of Kidambi and Srikanth 14 years hence will be equal to 2 times their present age. If at present Kidambi is 8 years elder to Srikanth, then what are their present ages?

- A. 22, 8 B. 29, 12 C. 18, 10 D. 13, 6 E. None of these

Correct Answers:

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

Explanations:

1. As the angle in a semicircle is always a right angle, any right angled triangle with all three of its points on the circumference of a circle must have its hypotenuse as the diameter.

To find the diameter, we just need to find the hypotenuse using the Pythagoras theorem.

$$\therefore \text{Hypotenuse} = \sqrt{1.8^2 + 2.4^2} = 3 \text{ CM}$$

$$\therefore \text{The circumference of the circle} = \pi D = 3\pi \text{ cm}$$

Hence, option D is correct.

2. Approach I:

Let the no. of men be x and women be y .

Now, as per the question

$$x + y = 52 \quad \dots(\text{i})$$

$$9x + 5y = 312 \quad \dots(\text{ii})$$

After solving eqn. (i) and (ii), we get

$$x = 13 \text{ (Men)}, y = 39 \text{ (Women)}$$

Hence, option A is correct

Approach II:

$$\text{Value of apple per begger} = \frac{312}{52} = 6 \text{ apples}$$

Men Women

9

5

 \
 /

6

 /
 \
1 3

$$\therefore \text{Men : Women} = 1 : 3$$

$$\therefore \text{Number of Men} = \frac{52}{1+3} \times 1 = 13$$

$$\text{Add number of Women} = 52 - 13 = 39$$

Hence, option A is correct.



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3. There are 10 even numbers in the group 1-21.

$$\therefore \text{The probability that the first ball is even numbered} = \frac{10}{21}$$

Since the ball is not replaced there are now 20 balls left, of which 9 are even numbered.

$$\therefore \text{The probability that the second ball is even numbered} = \frac{9}{20}$$

$$\therefore \text{Reqd. probability} = \frac{10}{21} \times \frac{9}{20} = \frac{9}{42} = \frac{3}{14}$$

Hence, option C is correct.

4. Let the each instalment be x.

$$\frac{x}{\left(1 + \frac{35}{4 \times 100}\right)} + \frac{x}{\left(1 + \frac{35}{4 \times 100}\right)^2} = 13360$$

$$\frac{x}{\left(1 + \frac{7}{80}\right)} + \frac{x}{\left(1 + \frac{7}{80}\right)^2} = 13360$$

$$\Rightarrow \frac{80x}{87} + \frac{6400x}{7569} = 13360$$

$$\Rightarrow \frac{6960x + 6400x}{7569} = 13360$$

$$\Rightarrow 13360x = 13360 \times 7569 \Rightarrow x = \text{Rs. } 7569$$

Hence, option B is correct.

5.

$$\text{CP of Hardik's bat} = \frac{5457}{85} \times 100$$

$$= 5457 \times \frac{20}{17} = 321 \times 20 = \text{Rs. } 6420$$

$$\text{CP of Pandya's bat} = \frac{5457}{102} \times 100$$

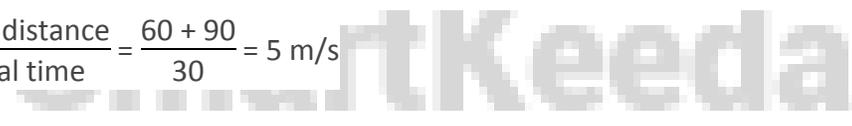
$$= \frac{5457}{51} \times 50 = 107 \times 50 = \text{Rs. } 5350$$

$$\therefore \text{Ratio} = 6420 : 5350 = 642 : 535 = 6 : 5$$

Hence, option E is correct.

- 6.** Let the maximum marks in each subject be 100.
 \therefore Ramnath's total score = 70% of $(100 + 100 + 100) = 70\%$ of $(300) = 210$
 Also, 75% marks in a subject correspond to 75% of $(100) = 75$
 Let Ramnath have scored $4x$, $5x$ and $6x$ in the three subjects.
 $\therefore 3x + 5x + 6x = 210$
 $\therefore 14x = 210$ i.e. $x = 15$
 Hence, his marks in the three subjects are 45, 75 and 90 .
 Hence, he has scored more than 75 in exactly one subject.
 Hence, option A is correct.

- 7.** The amount which Ady receives for managing the business
 $= \frac{15}{100} \times 10500 = 1575$
 Remaining amount of profit = $10500 - 1575 = \text{Rs. } 8925$
 The rest of the profit is to be divided in the ratio 2 : 3.
 \therefore Sandy's share in the profit = $8925 \times \frac{3}{5} = \text{Rs. } 5355$
 Hence, option A is correct.

- 8.**  Relative speed = $\frac{\text{Total distance}}{\text{Total time}} = \frac{60 + 90}{30} = 5 \text{ m/s}$ 
 $\therefore 5 \text{ m/s} = 5 \times \frac{18}{5} = 18 \text{ kmph}$ 
 Now relative speed = speed of auto rickshaw – speed of lorry
 or, $18 = 38 - \text{speed of lorry}$
 \therefore Speed of lorry = $38 - 18 = 20 \text{ km/h}$
 Hence, option C is correct.

- 9.** Let the initial price of Lalu be Rs. 100 per unit and Lalu's consumption be 10 units.
 \therefore Initial amount spent = $100 \times 10 = \text{Rs. } 1,000$
 New price of rice = 120% of 100 = Rs. 120 and new total amount spent = 108% of 1000 = Rs. 1,080
 \therefore New consumption = $\frac{1080}{120} = 9$ units
 \therefore Decrease in consumption = 1 unit
 \therefore % decrease = $\frac{1}{10} \times 100 = 10\%$
 Hence, option A is correct.

10. Let the present ages of Kidambi and Srikanth be x years and y years respectively.

As per the question,

$$(x + 14) + (y + 14) = 2(x + y)$$

$$x + y + 28 = 2x + 2y$$

$$x + y = 28 \quad \dots\text{(i)}$$

Also,

$$y + 8 = x$$

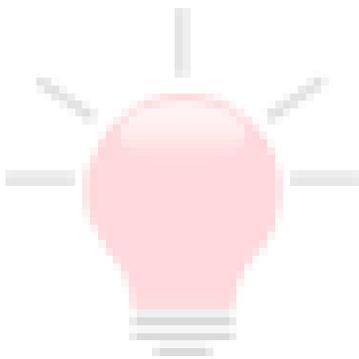
$$x - y = 8 \quad \dots\text{(ii)}$$

Solving eqns (i) and (ii), we get

$$x = 18 \text{ and } y = 10$$

Therefore, Present ages of Kidambi and Srikanth is 18 years and 10 years respectively

Hence, option C is correct.



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