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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 14

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

1. The present age of Riya is 3 times the present age of Ravi and  $\frac{3}{2}$  times the present age of Navya. If the average of their present ages is 24 years, what is the present age of Navya?

- A. 18 years      B. 36 years      C. 12 years      D. 15 years      E. 24 years

2. A shopkeeper purchased two articles for Rs. 750 each. He marked one 25% above the cost price and sold it at a 12% discount. For the other article, he interchanged the percentages. What is his overall profit/loss percentage?

- A. 7.5% Loss      B. 7.5% Loss      C. 3.25% Loss      D. 10% Profit      E. 3% Loss

3. In the same time, a car can travel thrice the distance travelled by a bike. If the speed of the bike is 20 km per hour less than that of the car then what will be the difference between distance between them at the end of 5 hours journey if they start simultaneously from a point?

- A. 120 km      B. 150 km      C. 50 km      D. 100 km      E. None of these

4. In a race of 1200 meters Mohan beats Munni by 200 meters but in a race of 1500 meters Munni beats Suraj by 300 meters. In a race of 3 km, by how many meters Mohan beats Suraj?

- A. 1250 meters      B. 1000 meters      C. 1500 meters      D. 750 meters      E. None of these

5. A basket contains 4 roses, 3 lilies and 2 sunflowers. A man picks 2 flowers at random from the basket. What is the probability that both are roses or both are lilies?

- A.  $\frac{1}{5}$       B.  $\frac{1}{4}$       C.  $\frac{1}{3}$       D.  $\frac{1}{2}$       E. None of these

6. The length of a rectangle is 12 cm more than the breadth and the area of the rectangle is three times of the area of a square of side 6 cm. Find the respective ratio of the perimeter of the rectangle to that of the square?

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

7. In three classes A, B and C the number of students was 147, 189 and 84 respectively. They were made to stand in some rows. If the number of students in each row was equal then what can be the maximum number of rows to make them stand?

- A. 20                      B. 21                      C. 22                      D. 18                      E. 17

8. A swimmer can swim at the speed of 20 km per hour in still water. He goes upstream from point P to point Q in 20 hours but while returning downstream from the point Q to Point P, due to wind, the speed of stream was decreased by some percentage of its actual speed therefore he reached the point P in the same time. By what percentage was the speed of stream decreased?

- A. 100%                      B. 300%                      C. 200%                      D. 50%                      E. None of these

9. A starts a business with an investment of Rs.  $x$  but after 6 months, B joined with an investment of Rs. 48000. At the end of 2 years, they earn a profit of Rs. 55,000, out of it, the share of A was Rs. 5000 less than that of B. Find the value of  $x$ ?

- A. 36,000                      B. 30,000                      C. 25,000                      D. 40,000                      E. None of these

10. In a hospital, a sweeper mixes phenyl with water in the ratio of 1 : 12 respectively. Every day he finishes three bottles of phenyl. In each bottle, the quantity of phenyl is 900 ml, then how many litres of water does he use in 2 days.

- A. 648                      B. 324                      C. 64.8                      D. 32.4                      E. None of these

**Correct Answers:**

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

## Explanations:

- 1.** Let  $x$  years be the present age of Ravi.  
 $\therefore$  Riya's present age =  $3x$  years  
 $\therefore$  Navya's present age =  $\frac{2}{3}$  times Riya's present age  
 $= \frac{2}{3} \times (3x) = 2x$  years
- Average of their present age = 24  
 $\therefore \frac{x + 3x + 2x}{3} = 24$
- $\therefore 6x = 72$   
 $\therefore x = 12$  years  
 $\therefore$  Ravi's present age = 12 years  
 $\therefore$  Navya's present age = 24 years  
 $\therefore$  Riya's present age = 36 years  
Hence, option E is correct.

- 2.** Total C.P. =  $2 \times 750 = \text{Rs. } 1,500$   
S.P. for the first article =  $750 \times 1.25 \times 0.88 = \text{Rs. } 825$   
For the second article, mark-up = 12% and discount = 25%  
 $\therefore$  S.P. for the second article =  $750 \times 1.12 \times 0.75 = \text{Rs. } 630$   
 $\therefore$  Total S.P. =  $825 + 630 = \text{Rs. } 1,455$   
 $\therefore$  Loss =  $1500 - 1455 = \text{Rs. } 45$   
 $\therefore$  Loss % =  $\frac{45}{1500} \times 100 = 3\%$   
Hence, option E is correct.

- 3.** Let the time is  $x$  hours  
The distance travelled by bike in  $x$  hours =  $a$  km then the distance travelled by car in  $x$  hours =  $3a$  km  
Speed =  $\frac{3a}{x} - \frac{a}{x} = \frac{2a}{x} = 20$  km per hour
- $\frac{a}{x} = 10$  km per hour
- In 5 hours,  $x = 5$   
 $A = 50$  km  
The total distance travelled by car =  $3a$  km = 150 km  
By bike =  $a$  km = 50 km  
The required difference =  $150 - 50 = 100$  km  
Hence, option D is correct.

4. When Mohan runs 1200 meters, Munni runs  $1200 - 200 = 1000$  meters  
Mohan: Munni =  $1200 : 1000 = 6 : 5$   
When Mohan runs 3000 km,

$$\text{Munni runs } \frac{3000 \times 5}{6} = 2500 \text{ meters}$$

When Munni runs 1500 meters, Suraj runs 1200 meters  
When Munni runs 2500 meters,

$$\text{Suraj runs, } \frac{2500 \times 12}{15} = 2000 \text{ meters}$$

The required distance =  $3000 - 2000 = 1000$  meters  
Hence, option B is correct.

5. The total number of ways of selecting 2 flowers out of 9 flowers

$$= {}^9C_2 = \frac{9 \times 8}{2} = 36$$

Total number of ways of selecting 2 roses out of 4 =  ${}^4C_2 = 6$

Total number of ways of selecting 2 lilies out of 3 lilies =  ${}^3C_2 = 3$

$$\text{The reqd. probability} = \frac{6}{36} + \frac{3}{36} = \frac{9}{36} = \frac{1}{4}$$

Hence, option B is correct.

6. Let the breadth of the rectangle =  $x$  cm then the length =  $x + 12$  cm  
The area of the square =  $\text{side}^2 = 6^2 = 36$  sq. cm

The area of the rectangle = 3 times of the area of the square =  $3 \times 36 = 108$  sq. cm = length  $\times$  breadth =  $x \times (x + 12)$

$$x^2 + 12x - 108 = 0$$

By solving,  $x = 6, -18$

Negative value is not possible therefore,  $x = 6$  m

Perimeter of the rectangle =  $2(l + b) = 2(6 + 6 + 12) = 48$  cm

Perimeter of the square =  $4 \times \text{side} = 4 \times 6 = 24$  cm

The required ratio =  $48 : 24 = 2 : 1$

Hence, option C is correct.

- 7.** The maximum number of students can be made to stand in each row = hcf of 147, 189, and 84 = 21  
The maximum number of rows to make them stand

$$= \frac{147}{21} + \frac{189}{21} + \frac{84}{21} = 7 + 9 + 4 = 20$$

Hence, option A is correct.

- 8.** Let the speed of stream =  $v$  km per hour  
Upstream speed =  $20 - v$  km per hour  
Let while returning, the speed of stream =  $x$  km per hour  
Then downstream speed =  $20 + x$  km per hour

$$(20 - v) \times 20 = (20 + x) \times 20$$

$$x + v = 0$$

$$x = -v$$

It means, the direction of stream was changed

It is only possible when the speed of stream was decreased by 200% of its actual speed

Hence, option C is correct.

- 9.** Let the share of A in profit = Rs.  $y$  then the share of B = Rs.  $(y + 5000)$

According to the question,

$$y + y + 5000 = 55000$$

$$y = 25000$$

The ratio of the share =  $25000 : 30000 = 5 : 6$

Let  $1000x = a$  then

$$\text{The ratio of share} = a \times 24 : 48 \times 18 = 5 : 6$$

$$a : 36 = 5 : 6$$

$$a = 30$$

The value of  $x = 1000a = 30,000$

Hence, option B is correct.

- 10.** Let the quantity of phenyl =  $x$  litres then the quantity of water =  $12x$  litres

Everyday he uses 3 bottles contains 900 ml each

$$\text{Then, } x = 3 \times 900 = 2700 \text{ ml}$$

$$\text{Therefore, } 12x = 2700 \times 12 = 32400 \text{ ml} = 32.4 \text{ litres}$$

$$\text{In two days, the quantity of water he used} = 32.4 \times 2 = 64.8 \text{ litres}$$

Hence, option C is correct.



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