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Word Problems Quiz 7

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

1. A shopkeeper sold an item at a discount of 14% on marked price and earns a profit of 20% on cost price. If the difference between marked price and cost price is Rs.85000, Find the marked price of the article.

- A. Rs. 360000 B. Rs. 250000 C. Rs. 200000 D. Rs. 300000 E. None of these

2. A mixture contains milk and water in the ratio 5 : 3. If 20 litres of water added to the mixture, the ratio of milk and water becomes 3 : 2. Find the quantity of milk in the original mixture.

- A. 320 litres B. 280 litres C. 300 litres D. 250 litres E. None of these

3. One filling pipe P is three times faster than another filling pipe Q, if P can fill tank in 24 hours, then what is the time taken to completely fill the tank if both the pipes are opened together?

- A. 12 hours B. 18 hours C. 16 hours D. 14 hours E. None of these

4. A truck is moving on the road. It makes 3000 revolutions in moving 3.96 km. What is diameter of the wheel of the truck?

- A. 21 cm. B. 14 cm. C. 42 cm. D. 28 cm. E. None of these

5. Simple interest on a certain sum at the rate of 8% per annum after three years will be Rs.14400. Find the compound interest on that sum at the rate of 12% per annum after 2 years.

- A. Rs. 15264 B. Rs. 13464 C. Rs. 10024 D. Rs. 13456 E. None of these

6. Average temperature from Sunday to Wednesday is 34°C while average temperature from Wednesday to Saturday is 38°C . Average temperature throughout the week is 36°C . Find the temperature on Wednesday.

- A. 36°C B. 38°C C. 34°C D. 32°C E. None of these

7. The multiplication of 2 consecutive odd natural numbers is 10815. What is the smaller number?

- A. 107 B. 105 C. 103 D. 109 E. None of these

8. A bag contains 30 balls, numbered 1 to 30. Two balls are drawn at random. What is the probability that the balls drawn contain a number which is multiple of 4 or 6 but not a multiple of both?

- A. $\frac{1}{6}$ B. $\frac{1}{5}$ C. $\frac{1}{4}$ D. $\frac{1}{3}$ E. None of these

9. The ratio of the present ages of Ramu and his mother is 2 : 5 and that of his mother and his father is 5 : 6. After 2 years the ratio of the ages of Ramu to that of his father will be 4 : 11. What is the present age of Ramu?

- A. 28 years B. 42 years C. 14 years D. 35 years E. None of these

10. A shopkeeper marked the price of an article 20% above the cost price and offers two successive discounts of 12% and 8%. If the cost price of the article is Rs.1200, find the selling price of the article.

- A. Rs. 965.824 B. Rs. 1225.824 C. Rs. 1055.824 D. Rs. 1165.824 E. None of these

Correct Answers:

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

Explanations:

1. We know that
 $mp \times (100 - \%d) = cp \times (100 + \%p)$
 $\Rightarrow mp \times (100 - 14) = cp \times (100 + 20)$
 $\Rightarrow \frac{mp}{cp} = \frac{120}{86} = \frac{60}{43}$

 $\Rightarrow mp : cp = 60 : 43$

Marked price of the article = $\frac{60}{60 - 43} \times 85000$

 $= \frac{60}{17} \times 85000 = \text{Rs. } 300000$
Hence, option D is correct.

2. Let the quantity of milk and water in the mixture is $5x$ and $3x$ litres.

According to the question

$$\frac{5x}{3x + 20} = \frac{3}{2}$$

$$\Rightarrow 10x = 9x + 60$$

$$\Rightarrow x = 60$$

Quantity of milk in the original mixture = $5x = 5 \times 60 = 300$ litres.

Hence, option C is correct.

3. Let the required time taken = t hours

Let efficiency of pipe Q = x

Then, efficiency of pipe P = $3x$

According to the question:

$$3x \times 24 = (3x + x) \times t$$

$$\Rightarrow \frac{72x}{4x} = t$$

$$\Rightarrow t = 18 \text{ hours}$$

Hence, option B is correct.

4. Circumference of the wheel = $2\pi r$

Revolutions $\times 2\pi r =$ distance

$$3000 \times 2 \times 22 \times r \div 7 = 396000$$

$$r = 21 \text{ cm.}$$

$$\text{Diameter} = 21 \times 2 = 42 \text{ cm.}$$

Hence, option C is correct.

5. Let the sum = Rs. P

$$\frac{P \times r \times t}{100} = SI$$

$$\Rightarrow \frac{P \times 8 \times 3}{100} = 14400$$

$$\Rightarrow P = \frac{1440000}{24}$$

$$\Rightarrow P = \text{Rs. } 60000$$

$$\text{Reqd. CI} = 60000 \times \frac{112}{100} \times \frac{112}{100} - 60000$$

$$= \text{Rs. } (75264 - 60000) = \text{Rs. } 15264$$

Hence, option A is correct.

6. Sunday + Monday + Tuesday + Wednesday = $4 \times 34 = 136^\circ\text{C}$
 Wednesday + Thursday + Friday + Saturday = $4 \times 38 = 152^\circ\text{C}$
 Sunday + Monday + Tuesday + Wednesday + Thursday + Friday + Saturday = $7 \times 36 = 252^\circ\text{C}$
 Wednesday = $(136 + 152 - 252)^\circ\text{C} = 36^\circ\text{C}$
 Hence, option A is correct.

7. Let the two consecutive odd natural numbers are $x, x + 2$
 According to the question
 $x(x + 2) = 10815$
 $\Rightarrow x^2 + 2x - 10815 = 0$
 $\Rightarrow x^2 + 105x - 103x - 10815 = 0$
 $\Rightarrow x(x + 105) - 103(x + 105)$
 $\Rightarrow (x + 105)(x - 103) = 0$
 $\Rightarrow x = 103, -105$ (neglected)
 $\Rightarrow x = 103$
 Smaller number = 103
 Bigger number = $103 + 2 = 105$
 Hence, option C is correct.

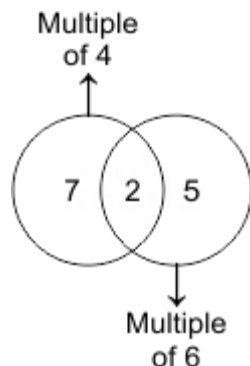
8. In between Ball 1 and Ball 30,

The total number of balls which is multiple of 4 = $\frac{30}{4} = 7$ (The Highest perfect integer)

The total number of balls which is multiple of 6 = $\frac{30}{6} = 5$

The total number of balls which is multiple of 4 and 6 = LCM of 4 and 6

= $12 = \frac{30}{12} = 2$ (The Highest perfect integer)



The total number of balls which is multiple of only 4 = $7 - 2 = 5$

The total number of balls which is multiple of only 6 = $5 - 2 = 3$

The total number of balls which is multiple of only 4 or 6 = $5 + 3 = 8$

The reqd. probability = $\frac{8}{30} = \frac{4}{15}$

Hence, option E is correct.

9. Ratio of the present ages:
Ramu : mother = 2:5
Mother : father = 5 : 6
Ramu : mother : father = 2 : 5 : 6
According to the question

$$\frac{2x + 2}{6x + 2} = \frac{4}{11}$$

$$\Rightarrow 22x + 22 = 24x + 8$$

$$\Rightarrow 2x = 14$$

$$\Rightarrow x = 7$$

Present age of Ramu = $2x = 2 \times 7 = 14$ years

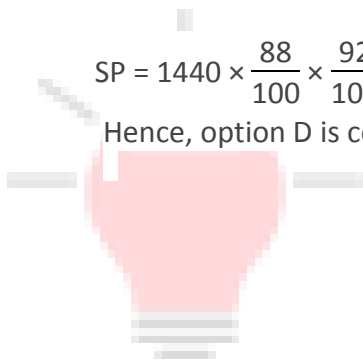
Hence, option (C) is correct.

10. CP = Rs.1200

$$MP = 1200 \times \frac{120}{100} = \text{Rs. } 1440$$

$$SP = 1440 \times \frac{88}{100} \times \frac{92}{100} = \text{Rs. } 1165.824$$

Hence, option D is correct.



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