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Word Problems Quiz 6

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

1. Two equal glasses are respectively 1/4th and 3/5th full of milk. They are then filled up with water and the contents are mixed in another glass. Find the ratio of milk and water in another glass.

A. 13 : 17 B. 15 : 19 C. 17 : 23 D. 18 : 25 E. None of these

2. Four years ago, average of the ages of Pinki, Rinki and Tinki was 26 years. Average of the present ages of Rinki and Tinki is 28 years. Present age of Pinki is what percent of the present average age of all of them.

A. 123.33% B. 113.33% C. 103.33% D. 93.33% E. None of these

3. Simple interest on a sum of Rs.50000 at the rate of 15% per annum after two years will be what percent of compound interest on that sum at the same rate of interest for the same time period.

A. 87.4% B. 89.6% C. 91.4% D. 93.02% E. None of these

4. The diameter of each wheel of a car is 70 cm. If each wheel rotates 400 times per minute, then the speed of the car (in km/hr) is (Take π = 22/7) :

A. 52.8 km/hr B. 582.5 km/hr C. 52.25 km/hr D. 525.5 km/hr E. None of these

5. 12500 students appeared in an exam. 50% of the boys and 70% of the girls cleared the examination. If the total percent of students qualifying is 60%, how many girls appeared in the exam?

A. 6500 B. 6200 C. 5500 D. 6250 E. None of these

6. Given that 24 carat gold is pure gold, 18 carat gold is 3/4th of pure gold and 20 carat gold is 5/6th of pure gold, the ratio of the pure gold in 18 carat gold to the pure gold in 20 carat gold is

A. 5 : 8 B. 9 : 10 C. 10 : 9 D. 8 : 5 E. None of these

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7. Two trains are running on parallel lines in the same direction at speeds of 60 km/h and 35 km/h respectively. The faster train crosses a man inside the slower train in 54 seconds. If the length of the slower train is 4/5th of the faster train, find the length of the slower train.

A. 250m B. 375m C. 450m D. 396m E. None of these

8. A bag contains 2 red balls, 3 green balls and 4 yellow balls. Three balls are drawn at random. Find the probability that all the balls are of same colour.

A. $\frac{1}{14}$ B. $\frac{1}{28}$ C. $\frac{5}{84}$ D. $\frac{1}{21}$ E. None of these

9. The ratio of the present ages of Ritu and Rani is 7 : 5. After seven years, ratio of their ages will be 21 : 16. Karan is five years older than Ritu. What will be age of Karan after three years?

A. 35 years B. 43 years C. 38 years D. 40 years E. None of these

10. Two trains leave station P at 5 : 30 pm and at 7 : 00 pm respectively. They travelled at 48 km/h and 60 km/h. How many Kilometres away will the two trains meet?

A. 240 km B. 280 km C. 320 km D. 360 km E. None of these

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Correct Answers:

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

Explanations:

1.

Part of milk in the first glass = $\frac{1}{4}$th

Part of water in first glass = $\frac{3}{4}$th

Part of milk in second glass = $\frac{3}{5}$th

Part of water in second glass = $\frac{2}{5}$th

Part of milk in final mixture $= \frac{1}{4} + \frac{3}{5} = \frac{5 + 12}{20} = \frac{17}{20}$

Part of water in final mixture $= \frac{3}{4} + \frac{2}{5} = \frac{15 + 8}{20} = \frac{23}{20}$

Reqd. ratio = $\frac{17}{20} : \frac{23}{20}$ = 17 : 23

Hence, option (C) is correct.

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2.

Sum of the present ages of Pinki, Rinki and Tinki = 26 × 3 + 4 × 3 = 90

Present average age = $\frac{90}{3}$ = 30 years

Sum of the present ages of Rinki and Tinki = 2 × 28 = 56 years

Age of Pinki = 90 – 56 = 34 years

Reqd. % = $\frac{34}{30} \times 100$ = 113.33%

Hence, option (B) is correct.

3.

$CI = P\left(1 + \frac{r}{100}\right)^n - P$

$\Rightarrow CI = 50000 \times \frac{115}{100} \times \frac{115}{100} - 50000$

$\Rightarrow CI = 66125 - 50000$
$\Rightarrow CI = Rs.16125$

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

$\Rightarrow SI = \frac{50000 \times 15 \times 2}{100} = Rs.\ 15000$

$Reqd.\ \% = \frac{15000}{16125} \times 100 = 93.02\%$

Hence, option (D) is correct.

4.

Circumference of wheel $= 2\pi r = 2 \times \frac{22}{7} \times \frac{70}{2}$

= 220cm = 2.2m Distance covered per minute = 400 × 2.2 = 880m

Distance covered per second $= \frac{880}{60}$m/s

Therefore Speed of car (in km/hr) $= \frac{880}{60} \times \frac{18}{5}$

= 52.8 km/hr

Hence, option A is correct.

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5. Let the number of boys be 'B' and girls be 'G'
As per the condition B + G = 12500 .....(1)
And $\frac{50}{100}B + \frac{70}{100}G = \frac{60}{100} \times 12500$

$\Rightarrow 5B + 7G = 75000$ .....(2)
From ....(1) and ....(2)
We get, G = 6250 = number of girls
Hence, option (D) is correct.

6.

18 carat gold = $\frac{3}{4}$pure gold = $\frac{3}{4} \times 24 = 18$

20 carat gold = $\frac{5}{6}$ pure gold = $\frac{5}{6} \times 24 = 20$

⇒ Required ratio = 18 : 20 = 9 : 10
Hence, option (B) is correct.

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7. According to the question,

$(60 - 35) \times \frac{5}{18} = \frac{D}{54}$

D = 375 m Length of the faster train = 375m,

Length of the slower train = $375 \times \frac{4}{5} = 300$ m

Hence, option E is correct.

8. Red = 2
Green = 3
Yellow = 4
Total = 9

Reqd. probability = $\frac{{}^{3}C_3 + {}^{4}C_3}{{}^{9}C_3}$

$= \frac{1 + 4}{84} = \frac{5}{84}$

Hence, option C is correct.

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9. Let the present ages of Ritu and Rani are 7x and 5x years respectively.
According to the question

$\frac{7x + 7}{5x + 7} = \frac{21}{16}$

⇒ 112x + 112 = 105x + 147
⇒ 7x = 35
⇒ x = 5
Present age of Ritu = 7x = 7 × 5 = 35 years
Present age of Karan = 35 + 5 = 40 years
Age of Karan after three years = 40 + 3 = 43 years
Hence, option B is correct.

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10. Let the trains meet after t hours from 7 : 00 pm
According to the question

$48 \times \frac{3}{2} + 48 \times t = 60 \times t$

$\Rightarrow 72 = 60t - 48t$

$\Rightarrow 12t = 72$

$\Rightarrow t = 6$

Required distance = 60 × 6 = 360 Km

Hence, option D is correct.

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