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Maths Questions for CLAT Exam

CLAT Maths Quiz 11

Directions: Kindly study the following Questions carefully and choose the right answer:

1. Out of two numbers, 4 times the smaller one is less than 3 times the larger one by 5, If the sum of the numbers is larger than 6 times their difference by 6, find the two numbers.

A. 55 and 58

B. 23 and 28

C. 59 and 43

D. 65 and 67

2. Acid and water are mixed in a vessel A in the ratio of 5 : 2 and in the vessel B in the ratio 8 : 5. In what proportion should quantities be taken out from the two vessels so as to form a mixture in which acid and water will be in the ratio of 9 : 4?

A. 7 : 2

B. 2 : 7

C. 7 : 4

D. 2 : 3

3. A bus travels 50% swifter than a car. Both start from point P at the same time and reach point Q, which is 330 km away from P. On the way, however, the bus lost about 88 minutes while stopping at the stops. The speed of the bus is:

A. 75 kmph

B. 100 kmph

C. 112.5 kmph

D. 125 kmph

4. How many kilograms of rice of Rs.5.4 per kg should be mixed with 10 kg of rice of Rs.4.5 per kg, such that there may be gain of 20% by selling the mixture at Rs.5.94 per kg.

A. 12 kg

B. 10 kg

C. 15 kg

D. 8 kg

5. There are 4 cotton kurties, 3 woolen kurties and 5 nylon kurties. If 3 kurties are selected at random, what is the probability that none of them are nylon kurties?

A. 9/32

B. 11/40

C. 7/44

D. 12/47

6. 4 girls can do a piece of work in 8 days, same work 3 boys can do in 9 days, 7 men in 2 days and 5 women in 4 days. Who among them have the minimum capacity of work?

A. Boy

B. Girl

C. Man

D. Woman

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7. A boat travel with a speed of 10 kmph in still water. If the speed of the stream is 3 kmph then find time taken by boat to travel 52 km downstream.

A. 2 hrs

B. 4 hrs

C. 6 hrs

D. 9 hrs

8. Sneha is 8 years older than her cousin. Her cousin is 24 years younger than his mother. If the ratio between the ages of Sneha and her cousin's mother is 7 : 11. What will be the age of Sneha's cousin after 3 years?

A. 21 years

B. 20 years

C. 26 years

D. 23 years

9. The profit earned after selling an article for Rs. 625 is same as the loss incurred after selling the article for Rs. 435. The cost price of the article is

A. Rs. 520

B. Rs. 530

C. Rs. 540

D. Rs. 550

10. The average weight of boys in a class is 25 kg and the average weight of girls in the same class is 15 kg. If the average weight of the whole class is 19 kg, what could be the possible strength of boys and girls respectively in the same class?

A. 8 and 12

B. 15 and 5

C. 14 and 6

D. 9 and 11

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Correct Answers:

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

Explanations:

1. Let the number be x and y, such that x > y .

Then, $3x - 4y = 5$ ....(1) and $(x + y) - 6(x - y) = 6$

$\Rightarrow -5x + 7y = 6$ .....(2)

Solving (1) and (2), we get : x = 59 and y = 43.

Hence, the required numbers are 59 and 43.

Hence, option C is correct.

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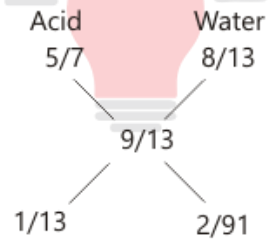
2. By allegation method:



$\therefore$ Required ratio = $\frac{1}{13} : \frac{2}{91} = 7 : 2$

Hence, option A is correct.

3. **Approach I:** Let the speed of the car be x kmph.

$\therefore$ The speed of the bus = $x \times \frac{150}{100} = \frac{3x}{2}$

Now, $\frac{330}{x} - \frac{330}{\frac{3x}{2}} = \frac{88}{60}$

or, $\frac{330}{x} - \frac{220}{x} = \frac{88}{60}$

or, $\frac{330-220}{x}=\frac{88}{60}$

or, $\frac{110}{x}=\frac{88}{60}$

$\therefore x=\frac{60\times 110}{88}=75$

Therefore the speed of the car = 75 kmph

$\therefore$ Speed of the bus = $\frac{3x}{2}=75\times\frac{3}{2}$

= 112.5 kmph

Approach II:

Product of speeds = $\frac{\text{Distance}\times\text{Difference in speeds}}{\text{difference in time}}$

Let speed of car be 2x.

$\therefore$ Speed of the bus be = 3x

$3x\times 2x=\frac{330\times x}{\frac{88}{60}}$

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$\Rightarrow 3x\times 2x=\frac{330\times x\times 60}{88}$

$\Rightarrow x=\frac{330\times 10}{88}=\frac{75}{2}$

$\therefore$ Speed of bus = $\frac{75}{2}\times 3=112.5$ km/h

Hence, option C is correct.

4. Let the quantity of Rs.5.4 per kg rice = x kg

According to the question,

$x\times 5.4+4.5\times 10=5.94\times(10+x)\div 120\times 100$

$5.4x+45=4.95\times(10+x)$

$5.4x+45=49.5+4.95x$

$5.4x - 4.95x = 49.5 - 45$

$0.45x = 4.5$

$x = 10$ kg

Hence, option B is correct.

5. 3 kurties out of 12 kurties can be chosen in ${}^{12}C_3$ ways

As given in the question above that we don't have to choose any nylon kurti

∴ we have to select 3 kurties out of the remaining 7 kurties.

This can be done in ${}^{7}C_3$ ways

∴ Reqd. probability $= \frac{{}^{7}C_3}{{}^{12}C_3}$

$= \frac{7 \times 6 \times 5}{12 \times 11 \times 10} = \frac{7}{44}$

Hence, option C is correct.

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6. From the given information,

(8 × 4)Girls ≡ (9 × 3)Boys ≡ (7 × 2)Men ≡ (5 × 4)Women

∴ 32 Girls ≡ 27 Boys ≡ 14 Men ≡ 20 Women

Hence Girls have minimum capacity of work among them.

Hence, option B is correct.

7. Downstream Speed of boat = 10 + 3 = 13 kmph

Time taken $= \frac{\text{Distance}}{\text{Speed}} = \frac{52}{13} = 4$ hrs.

Hence, option B is correct.

8. Let the age of Sneha = x, her cousin's age = x – 8, Cousin's mother age = x – 8 + 24

Ratio between the ages of Sneha and her cousin's mother is 7 : 11

x : x + 16 = 7 : 11

11 × x = (x + 16) × 7

11x = 7x + 112

4x = 112

x = 28

Sneha's cousin age = 28 – 8 = 20

After 3 years Sneha's cousin age = 20 + 3 = 23 years

Hence, option D is correct.

9. Let the CP be x

According to the question,

625 – x = x – 425

⇒ 2x = 1060

⇒ x = Rs. 530.

Hence, option B is correct.

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10. By allegation method,

(Boys) (Girls)
25 15
\ /
19
/ \
4 6
8 12

Hence the possible strength of the class will be (8 + 12) = 20 In which there are possibly 8 boys and 12 girls in the class.

Hence, option A is correct.

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