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

## Bank PO Maths Quiz 43

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

1. Two pipes A and B can fill 20 gallons and 30 gallons of water in one hour respectively and the third pipe C can empty 'x' gallons of water in an hour. If all the three are opened together, the tank gets filled in 15 hours, and when pipe A and B are opened together the tank gets filled in 12 hours, then find how much gallons of water are drained by pipe C in an hour?

- A. 30                      B. 40                      C. 50                      D. 20                      E. 10

2. Three workers Trump, Putin and Jinping are appointed to do a job. They together started the job but Jinping left after 3 days when 37% of the job was done. The remaining job was completed by Trump and Putin in 7 days. The ratio of efficiency of Trump and Putin is 4 : 5. Find the number of days required by the slowest worker to complete the entire job alone?

- A. 22 days                      B. 20 days                      C. 24 days                      D. 18 days                      E. 30 days

3. JK and his business partner JP started a joint venture company with initial investment in the ratio of 7 : 2. The company earned equal income for the first and second year and the profit is divided equally between them every year. To equalise the initial investment JP had to pay his entire share of income for the 1st year and half his share of income in the 2nd year. Find the ratio of initial investment to total income.

- A. 17 : 20                      B. 20 : 37                      C. 40 : 17                      D. 27 : 20                      E. None of these

4. The ratio of speeds of a tiger and horse is 3 : 2. Both start from place A at the same time and reach place B, which is 75 km away from place A at the same time as the tiger lost about 12.5 minutes while hunting a deer. Find the speed of the horse.

- A. 120 km/h                      B. 150 km/h                      C. 80 km/h                      D. 70 km/h                      E. None of these

5. The ratio between the present ages of Amon and Chan is 3 : 4. The ratio of Bevan's age after 5 years to Chan's age 1 year ago is 4 : 3 and four times the difference in ages of Chan and Amon is one more than the age of Bevan. Find the average of the present ages of Amon and Chan.

- A. 20 years                      B. 10 years                      C. 14 years                      D. 15 years                      E. None of these

6. The C.P of a Denim is 10% more than C.P of a T-shirt. The shopkeeper marked up Denim at 20% above the C.P and T-shirt at 30% above the C.P. Find the sum of marked price of 4 Denims and 5 T-shirts, if shopkeeper allowed discount of 20% on T-shirt and 25% on Denim and the difference between selling prices of both is Rs. 50.

A. Rs. 11680      B. Rs. 10780      C. Rs. 12680      D. Rs. 11780      E. Rs. 13680

7. As per a company policy only 25% of the female employees and 20% of the male employees can hold the positions higher than level 2. If the ratio of female and male employees in the company is 3 : 2, then find the percentage of employees which are working below level 2.

A. 75%      B. 77%      C. 70%      D. 72%      E. 79%

8. The monthly expenditure of Irfan is 40% less than that of Imran. If at the end of the month Imran and Irfan save Rs. 12,000 and Rs. 10,000 respectively and the ratio of monthly income of Imran and Irfan is 8 : 5 respectively, then the yearly income of Imran is how much more than yearly income of Irfan?

A. Rs. 42000      B. Rs. 504000      C. Rs. 504200      D. Rs. 50400      E. Rs. 50800

9. A vessel contains a mixture of acid and aqua in the ratio of 4 : 1. 30% of this mixture is taken out and then 2 litres of aqua is added to the vessel. Further 25% of the mixture is taken out and 3 litres of acid is added. If the initial quantity of the mixture be 100 litres, then find the percentage of aqua in the resultant mixture.

A. 27.25%      B. 25.12%      C. 21.05%      D. 17.22%      E. None of these

10. Average marks of group of students is 48. Out of these, 3 students with marks 43, 68 and 51 are removed and a new student with a score of 84 is added to the list. If the number of students in the group was 8, then find the percentage increase in the average marks with respect to the initial average?

A. 6.25%      B. 5.75%      C. 8.25%      D. 6.75%      E. None of these

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**Correct Answers:**

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

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## Explanations:

1. Gallons of water filled by pipe A and B in one hour =  $20 + 30 = 50$

Capacity of the tank =  $50 \times 12 = 600$  gallon

Now three pipes together,

$$\Rightarrow (20 + 30 - x) \times 15 = 600$$

$$\Rightarrow 300 + 450 - 15x = 600$$

$$\Rightarrow 15x = 750 - 600$$

$$\Rightarrow X = \frac{150}{15} = 10 \text{ gallons.}$$

Hence, option E is correct.

2. Let  $x$ ,  $y$  and  $z$  are the one day's work of Trump, Putin and Jinping respectively.

According to the question,

$$\Rightarrow 3 \times (x + y + z) = 37\% \text{ of the work}$$

$$\Rightarrow 7 \times (x + y) = 63\%$$

$$\Rightarrow x + y = 9\%$$

$\therefore$  The ratio of efficiency of Trump and Putin is 4 : 5,

$\therefore 5x = 4y$  and  $x = 4\%$ ,  $y = 5\%$  work per day.

It implies Trump can complete the job and in 25 days and Putin in 20 days.

In 3 days  $(x + y + z)$  do 37% of the work

Out of this Trump and Putin would do 27% work =  $(3 \times 9\%)$  of the work.

Remaining work =  $37\% - 27\% = 10\%$  (done by Jinping in 3 days)

$\therefore$  The work of  $z = \frac{10}{3} = 3.33\%$  work per day

$\therefore$  Jinping is the slowest and he would do the work in 30 days.

Hence, option E is correct.

3. Let the initial investment of JK be '7m'

∴ The initial investment of JP will be '2m'

Also, let the total income generated in two years be 4n

Though the profit for the two years is divided equally between them,

∴ JK's share in income will be = 2n

And JP's share in income will be = 2n

Now to equalise initial investment,

$$\Rightarrow 2m + \frac{3n}{2} = 7m$$

$$\Rightarrow \frac{3n}{2} = 5m$$

$$\Rightarrow \frac{m}{n} = \frac{3}{10}$$

∴ Ratio of initial investment and total income =  $\frac{9m}{4n} = \frac{27}{40}$

Hence, option E is correct.

4. Let speed of the horse be x km/h.

∴ Speed of the tiger =  $\frac{3x}{2}$  km/h

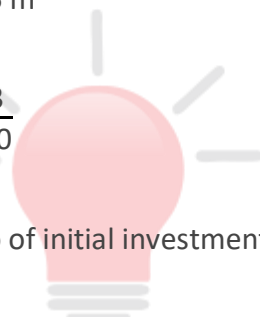
Now, according to the question,

$$\Rightarrow \frac{75}{x} - \frac{75}{3x/2} = \frac{125}{10 \times 60}$$

$$\Rightarrow \frac{75}{x} - \frac{50}{x} = \frac{5}{24}$$

$$\Rightarrow x = \frac{25 \times 24}{5} = 120$$

Hence, option A is correct.



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5. Let Amon's age = A, Bevan's age = B, and Chan's age = C

Then, according to the question,

$$\Rightarrow \frac{A}{C} = \frac{3}{4} \dots\dots\dots(i)$$

$$\Rightarrow \frac{B+5}{C-1} = \frac{4}{3} \dots\dots\dots(ii)$$

$$\Rightarrow 4 \times (C - A) = B + 1 \dots\dots\dots(iii)$$

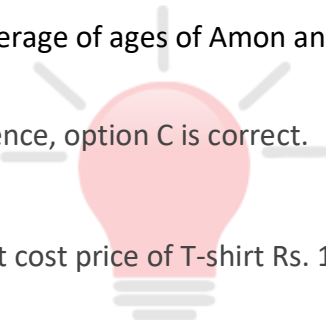
After solving these equations,

$$\Rightarrow A = 12$$

$$\Rightarrow C = 16$$

$$\text{Average of ages of Amon and Chan} = \frac{12 + 16}{2} = 14$$

Hence, option C is correct.



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6. Let cost price of T-shirt Rs. 100x and cost price of Denim Rs. 110x

Marked price of Denim

$$\frac{110x \times 120}{100} = \text{Rs. } 132x$$

$$\text{Marked price of T-shirt} = \frac{100x \times 130}{100} = \text{Rs. } 130x$$

$$\text{Selling price of Denim} = \frac{132x \times 75}{100} = \text{Rs. } 99x$$

$$\text{Selling price of T-shirt} = \frac{130x \times 80}{100} = \text{Rs. } 104x$$

According to the question,

$$\Rightarrow 104x - 99x = 50$$

$$\Rightarrow 5x = 50$$

$$\Rightarrow x = 10$$

$$\text{Marked price of 4 Denim and 5 T-shirt} = \text{Rs. } [(132 \times 10) \times 4 + (130 + 10) \times 5] = \text{Rs. } 11780$$

Hence, option D is correct.

7. Let the number of female be  $3x$  and male be  $2x$

$\therefore$  Number of employees which work below level 2

$$= (75\% \times 3x) + (80\% \times 2x) = \frac{77x}{20}$$

$$\text{Reqd. \%} = \frac{(77x/20)}{5x} \times 100 = 77\%$$

Hence, option B is correct.

8. Let the monthly income of Imran and Irfan is Rs. R and Rs. S respectively.

Then, according to the question

Ratio of their monthly income = R : S = 8 : 5

Let us assume it  $8x$  and  $5x$ , then the difference between their monthly income

$$\Rightarrow 8x - 5x = 3x \dots\dots\dots(i)$$

Let the monthly expenditure of Imran is Rs.  $100a$

Then the monthly expenditure of Irfan = Rs.  $60a$

Ratio of Imran's and Irfan's expenditures =  $100a : 60a = 5 : 3$

According to question :

$$\Rightarrow \frac{8x - 12000}{5x - 10000} = \frac{5}{3}$$

$$\Rightarrow 24x - 36000 = 25x - 50000$$

$$\Rightarrow x = 14,000$$

$\therefore$  Required difference =  $3x = 3 \times 14000 \times 12 = \text{Rs. } 504000$

Hence, option B is correct.

9. Total amount in the vessel = 100L



After removing 30% of mixture:

$$\text{Remaining acid} = 80 \times \frac{100 - 30}{100} = 56\text{L}$$

$$\text{Remaining aqua} = 20 \times \frac{100 - 30}{100} = 14\text{L}$$

Now 2 litres aqua has been added to the mixture.

$$\therefore \text{Remaining aqua} = 14 + 2 = 16\text{L}$$

Again,

after removing 25% mixture:

$$\text{Remaining acid} = 56 \times \frac{75}{100} = 42\text{L}$$

$$\text{Remaining aqua} = 16 \times \frac{75}{100} = 12\text{L}$$

Now 3 litres acid has been added to the mixture.

$$\therefore \text{Remaining acid} = 42 + 3 = 45\text{L}$$

$$\text{Reqd. \%} = \frac{12}{12 + 45} \times 100 = 21.05\% \text{ (approx.)}$$

Hence, option C is correct.

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**10.** Let the sum of the marks of the unchanged 5 students from initial tally be equal to 'x', such that,

$$\underline{x + 43 + 68 + 51} = 48 \text{ (Given)}$$

8

Then,

$$x = 384 - (43 + 68 + 51) = 384 - 162 = 222$$

With adding of a new student marks,

$$\text{Sum of marks of 6 students becomes} = x + 84 = 222 + 84 = 306$$

$$\text{New Average} = \frac{306}{6} = 51$$

$$\text{Percentage increase in average} = \frac{51 - 48}{48} \times 100$$

$$= \frac{300}{48} = \frac{100}{16} = 6.25\%$$

Hence, option A is correct.

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