



CAT Level Questions on Percentage

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Instructions

For the following questions answer them individually

Question 1

Seema has joined a new Company after the completion of her B.Tech from a reputed engineering college in Chennai. She saves 10% of her income in each of the first three months of her service and for every subsequent month, her savings are Rs. 50 more than the savings of the immediate previous month. If her joining income was Rs. 3000, her total savings from the start of the service will be Rs. 11400 in:

- A 6 months
- B 12 months
- C 18 months
- D 24 months

Answer: C

Explanation:

Seema saved Rs. 900 in the first 3 months. She must have saved Rs. $(11400 - 900) = \text{Rs. } 10500$ in the subsequent months.

The sequence will be of the form: $350 + 400 + \dots + n \text{ terms} = 10500$

$$\Rightarrow \frac{n}{2} [2 \cdot 350 + (n-1) \cdot 50] = 10500$$

$$\Rightarrow \frac{n}{2} [70 + (n-1) \cdot 50] = 10500$$

$$\Rightarrow n^2 + 13n = 420$$

Solving, we get $n = 15$

The savings of Rs. 10500 is done in 15 months. Seema saved Rs. 11400 in $15 + 3 = 18$ months.

Hence, option C is the correct answer.

Question 2

Sailesh is working as a sales executive with a reputed FMCG Company in Hyderabad. As per the Company's policy, Sailesh gets a commission of 6% on all sales up to Rs. 1,00,000 and 5% on all sales in excess of this amount. If Sailesh remits Rs. 2,65,000 to the FMCG company after deducting his commission, his total sales were worth:

- A Rs. 1,20,000
- B Rs. 2,90,526
- C Rs. 2,21,054
- D Rs. 2,80,000

Answer: D

Explanation:

Let total sales be 'x'

The commission that Sailesh will get is $x - 265000$

He gets 6% on sales up to 100000 and 5% on sales greater than that.

Calculating his commission on total sales:

$$0.06 \cdot 100000 + 0.05(x - 100000)$$

Equating,

$$0.05x + 1000 = x - 265000$$

$$0.95x = 266000$$

$$x = 280000$$

Hence, his sales were worth 280,000

Question 3

There are two alloys P and Q made up of silver, copper and aluminium. Alloy P contains 45% silver and rest aluminium. Alloy Q contains 30% silver, 35% copper and rest aluminium. Alloys P and Q are mixed in the ratio of 1 : 4 . 5. The approximate percentages of silver and copper in the newly formed alloy is:

- A 33% and 29%
- B 29% and 26%
- C 35% and 30%
- D None of the above

Answer: A

Explanation:

Composition of alloy P

Silver:Copper:Aluminium = 45:0:55

Composition of alloy Q

Silver:Copper:Aluminium = 30:35:35

They are mixed in ratio of 1: 4.5

Let us consider alloy P is taken 200 grams and alloy Q is taken 900 grams.

Then for alloy P :-

Silver:Copper:Aluminium = 90:0:110

For alloy Q:

Silver:Copper:Aluminium = 270:315:315

Total weight of P and Q combined is 1100 grams.

When P and Q are mixed, the new combined ratio of

Silver:Copper:Aluminium = 360:315:425

Percentage of Silver in mixture = $\frac{360}{1100} \times 100 \cong 33\%$

Percentage of Copper in mixture = $\frac{315}{1100} \times 100 \cong 29\%$

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Question 4

Arun's present age in years is 40% of Barun's. In another few years, Arun's age will be half of Barun's. By what percentage will Barun's age increase during this period?

Answer:20

Explanation:

Let Arun's current age be A. Hence, Barun's current age is 2.5A

Let Arun's age be half of Barun's age after X years.

Therefore, $2*(X+A) = 2.5A + X$

Or, $X = 0.5A$

Hence, Barun's age increased by $0.5A/2.5A = 20\%$

Question 5

The number of girls appearing for an admission test is twice the number of boys. If 30% of the girls and 45% of the boys get admission, the percentage of candidates who do not get admission is

- A 35
- B 50
- C 60
- D 65

Answer: D

Explanation:

Let the number of girls be $2x$ and number of boys be x .

Girls getting admission = $0.6x$

Boys getting admission = $0.45x$

Number of students not getting admission = $3x - 0.6x - 0.45x = 1.95x$

Percentage = $(1.95x/3x) * 100 = 65\%$

Question 6

If equal numbers of people are born on each day, find the approximate percentage of the people whose birthday will fall on 29th February. If we are to consider people born in 20th century (1901-2000) and assuming no deaths.

- A 0.374
- B 0.5732
- C 0.0664
- D None of these

Answer: D

Explanation:

Assume one person is born every day. In 100 years, there will be 25 leap years. So 25×1 additional people will be born on these days.

So, total people born will be = $365 \times 100 \times 1 + 25 \times 1$

And people born on 29th february = 25×1

Hence percentage will be = $\frac{25 \times 1}{365 \times 100 \times 1 + 25 \times 1} \times 100 = 0.0684$

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Question 7

Tina, Mina, Gina, Lina and Bina are 5 sisters, aged in that order, with Tina being the eldest. Each of them had to carry a bucket of water from a well to their house. Their buckets' capacities were proportional to their ages. While returning, equal amount of water got splashed out of their buckets. Who lost maximum amount of water as a percentage of the bucket capacity?

- A Tina
- B Mina
- C Gina
- D Lina
- E Bina

Answer: E

Explanation:

Let the capacities of bucket of water carried by Tina, Mina, Gina, Lina and Bina respectively be W_T, W_M, W_G, W_L, W_B

It is given that : $W_T > W_M > W_G > W_L > W_B$

Let they spill x litres of water from the bucket.

Thus, %age of water spilled by them respectively be

$$= \frac{x}{W_T} \times 100, \frac{x}{W_M} \times 100, \frac{x}{W_G} \times 100, \frac{x}{W_L} \times 100, \frac{x}{W_B} \times 100$$

$$\therefore W_T > W_M > W_G > W_L > W_B$$

$$\therefore \frac{x}{W_T} \times 100 < \frac{x}{W_M} \times 100 < \frac{x}{W_G} \times 100 < \frac{x}{W_L} \times 100 < \frac{x}{W_B} \times 100$$

Thus, Bina lost maximum amount of water as a percentage of the bucket capacity.

Question 8

In 2006, Raveendra was allotted 650 shares of Sun Systems Ltd in the initial public offer, at the face value of Rs. 10 per share. In 2007, Sun Systems declared the bonus at the rate of 3 : 13. In 2008, the company again declared the bonus at the rate of 2 : 4. In 2009, the company declared a dividend of 12.5%. How much dividend does Raveendra get in 2009 as a percentage of his initial investment?

- A 24.5%
- B 23.9%
- C 24.1%
- D 23%

Answer: D

Explanation:

Bonus share received in 2007 = $650 \times (3/13) = 150$

Bonus share received in 2008 = $800 \times (1/2) = 400$

So, has has $(150 + 400) = 550$ extra shares

$$1200 \times 12.5$$

Dividend he will get = $\frac{1200 \times 12.5}{650} \times 100\% = 23\%$

Hence, option D is the correct answer.

Question 9

The ratio of number of male and female journalists in a newspaper office is 5:4. The newspaper has two sections, political and sports. If 30 percent of the male journalists and 40 percent of the female journalists are covering political news, what percentage of the journalists (approx.) in the newspaper is currently involved in sports reporting?

- A 65 percent
- B 60 percent
- C 70 percent
- D None of the above

Answer: A

Explanation:

The ratio of number of male and female journalists in a newspaper office is 5:4. The newspaper has two sections, political and sports. If 30 percent of the male journalists and 40 percent of the female journalists are covering political news, what percentage of the journalists (approx.) in the newspaper is currently involved in sports reporting?

Let '9x' be the number of total journalists in the office. Then, we can say that the number of male and female journalists are '5x' and '4x' respectively.

It is given that 30 percent of the male journalists and 40 percent of the female journalists are covering political news. Hence, total number of journalists who are covering political news = $0.3 \cdot 5x + 0.4 \cdot 4x = 3.1x$

Therefore, the total number of journalists who are covering sports news = $9x - 3.1x = 5.9x$.

Hence, the percentage of the journalists in the newspaper is currently involved in sports reporting = $\frac{5.9x}{9x} \times 100 \approx 65$ percent. Therefore, option A is the correct answer.

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Question 10

Arun's present age in years is 40% of Barun's. In another few years, Arun's age will be half of Barun's. By what percentage will Barun's age increase during this period?

Answer: 20

Explanation:

Let Arun's current age be A. Hence, Barun's current age is 2.5A

Let Arun's age be half of Barun's age after X years.

Therefore, $2 \cdot (X + A) = 2.5A + X$

Or, $X = 0.5A$

Hence, Barun's age increased by $0.5A / 2.5A = 20\%$

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