



# LIC AE

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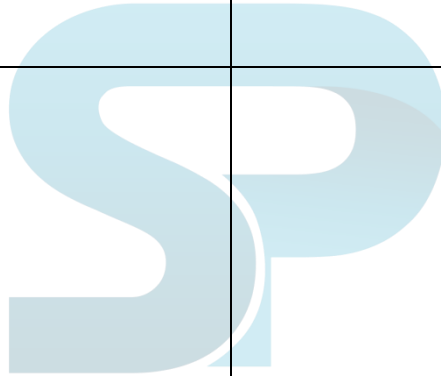
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QUESTIONS



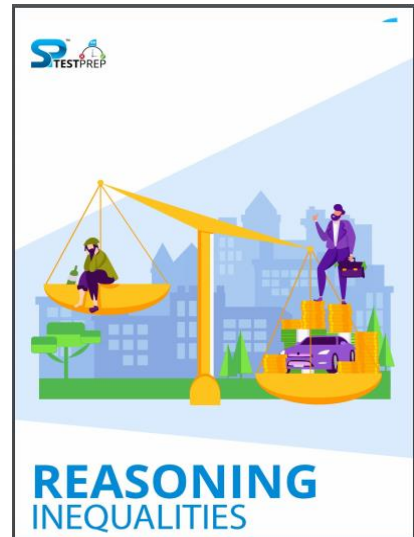
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**1. Total number of students in a class is 12. The average age of first 6 students is 34 years and the average age of last 7 students is 38 years. If the average age of the class is 36 years, then what is the average age of 6th students of the class?**

- A. 35 years
- B. 36 years
- C. 37 years
- D. 39 years
- E. None of these

**Answer:** E

**Explanation:**

Total age of the class =  $36 * 12 = 432$

Sum of the ages of first 6 students =  $34 * 6 = 204$

Sum of the ages of last 7 students =  $38 * 7 = 266$

Age of 6th student =  $(204 + 266) - 432 = 38$

**2. The ratio of the cost to marked price of the watch is 1: 2. If the shopkeeper offer a discount of 20% and the cost price of the watch is Rs.750, then what is the total profit of the watch?**

- A. Rs.250
- B. Rs.400
- C. Rs.350
- D. Rs.450
- E. Rs.300

**Answer:** D

**Explanation:**

CP = 750

MP =  $\frac{2}{1} * 750 = 1500$

SP =  $1500 * \frac{80}{100} = 1200$

Total profit =  $1200 - 750 = 450$

**3. The person invests the certain amount in scheme A that offers 15% annum rate of compound interest for 2 years and he also invests same amount of money in scheme B that offers same rate of interest for same period. If the difference between the interest received by scheme A and B is Rs.18, then find the investment amount?**



- A. Rs.1200
- B. Rs.1100
- C. Rs.1000
- D. Rs.800
- E. None of these

Answer: D

Explanation:

Difference between SI and CI for 2 years =  $P * R * \frac{r}{100} * 100$

$$18 = P * 15 * \frac{15}{100} * 100$$

$$P = 800$$

4. The speed of the stream is 8 kmph. If the time taken by the boat travels 240 km upstream and downstream in 40 hours, then what is the difference between the time taken by upstream covers 84 km and downstream covers 180 km?

- A. 3
- B. 4
- C. 5
- D. 6
- E. None of these



Answer: A

Explanation:

Stream speed = 8 kmph

$$240(8 + x) + 240(x - 8) = 40$$

$$6 * (x - 8 + 8 + x) = x^2 - 64$$

$$12x = x^2 - 64 \Rightarrow x^2 - 12x - 64 = 0 \Rightarrow (x - 16)(x + 4) = 0$$

$$x = 16 \text{ kmph}$$

Upstream speed =  $16 - 8 = 8$  kmph

Downstream speed =  $16 + 8 = 24$  kmph

$$\text{Required Time} = \frac{84}{8} - \frac{180}{24} = 10.5 - 7.5 = 3 \text{ hours}$$



5. Ratio of the ages of Rahul to Bharathi is 4: 5 and the Kevin is 5 years elder than Bharathi. If the average age of Rahul, Bharathi and Kevin is 25 years, then what is the difference between the ages of Rahul and Kevin?

- A. 5 years
- B. 10 years
- C. 15 years
- D. 20 years
- E. None of these

Answer: B

Explanation:

$$B = K - 5$$

$$\frac{r}{b} = \frac{4}{5}$$

$$R = \frac{4}{5} * (K - 5)$$

$$\frac{4}{5} * (K - 5) + K - 5 + K = 75$$

$$4K - 20 + 5K - 25 + 5K = 75 * 5$$

$$14K = 375 + 20 + 25$$

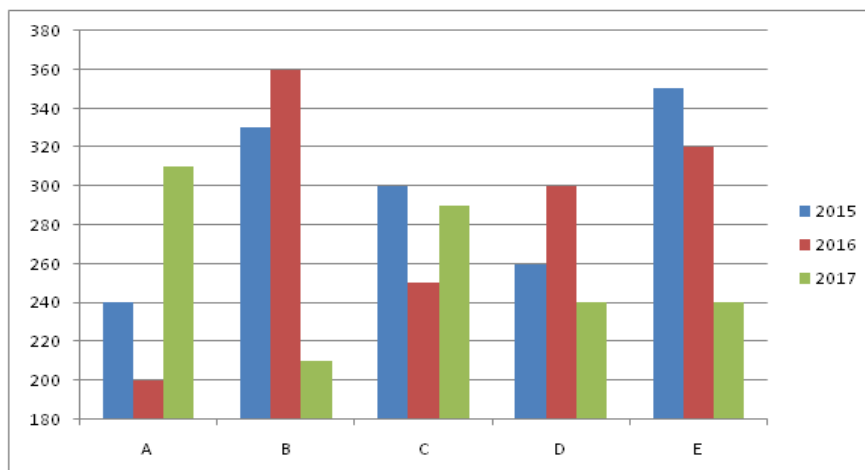
$$K = 30$$

$$R = \frac{4}{5} * (25) = 20$$

$$\text{Difference} = 30 - 20 = 10$$



Directions (6 – 10): Study the following information carefully and answer the questions given below? The given bar graph shows the number of mobiles manufactured in different shops in different years.





**6. What is the ratio of the total number of mobile manufactured in E in all the years together to the total number of mobile manufactured in B in all the years together?**

- A. 89: 88
- B. 90: 89
- C. 91: 90
- D. 92: 91
- E. None of these

**Answer:** C

**Explanation:**

Required ratio =  $(350 + 320 + 240) : (330 + 360 + 210)$

= 910: 900

= 91: 90

**7. What is the difference between the total number of mobile manufactured in A and B together in 2016 and total number of mobile manufactured in C and D together in 2017?**

- A. 20
- B. 30
- C. 40
- D. 10
- E. None of these

**Answer:** B

**Explanation:**

A and B in 2016 =  $200 + 360 = 560$

C and D in 2017 =  $290 + 240 = 530$

Difference =  $560 - 530 = 30$

**8. In shop F, the number of mobile manufactured in 2015, 2016 and 2017 are 20%, 15% and 30% more than the number of mobile manufactured in E in respective years, then what is the sum of the total number of mobile manufactured in F and C in all the years together?**

- A. 2010
- B. 1980
- C. 1950
- D. 1940
- E. 1920

**Answer:** D







Explanation:

$$F \text{ in } 2015 = \frac{120}{100} * 350 = 420$$

$$F \text{ in } 2016 = \frac{115}{100} * 320 = 368$$

$$F \text{ in } 2017 = \frac{130}{100} * 240 = 312$$

$$\text{Total number of mobile in F} = 420 + 368 + 312 = 1100$$

$$\text{Total number of mobile in C} = 300 + 250 + 290 = 840$$

$$\text{Required sum} = 1100 + 840 = 1940$$

**9. What is the average of the total number of mobile manufactured in all the shops together in 2016?**

- A. 246
- B. 286
- C. 312
- D. 322
- E. None of these

Answer: B

Explanation:

$$\text{Required average} = (200 + 360 + 250 + 300 + 320) / 5 = 286$$

**10. Total number of mobile manufactured in B in 2015 is approximately what percent of the total number of mobile manufactured in B in all the years together?**

- A. 29.89%
- B. 32.23%
- C. 33.34%
- D. 36.67%
- E. 39.98%

Answer: D

Explanation:

$$\text{Required percentage} = [330 / (330 + 360 + 210)] * 100 = 36.67\%$$

**Directions (11– 15): What value should come in the place of question mark (?) in the following number series?**

**11. 59, ?, 94, 158, 283**

- A. 52



- B. 56
- C. 61
- D. 62
- E. 67

Answer: E

Explanation:

$$59 + 2^3 = 67$$

$$67 + 3^3 = 94$$

$$94 + 4^3 = 158$$

$$158 + 5^3 = 283$$

**12. 39, 26, 47, 18, ?, 10**

- A. 50
- B. 52
- C. 48
- D. 55
- E. 37

Answer: D

Explanation:

$$39 - 13 = 26$$

$$26 + 21 = 47$$

$$47 - 29 = 18$$

$$18 + 37 = 55$$

$$55 - 45 = 10$$

**13. 96, 480, 120, 600, ?, 750**

- A. 140
- B. 150
- C. 100
- D. 200
- E. 250

Answer: B

Explanation:





$$96 * 5 = 480$$

$$\frac{480}{4} = 120$$

$$120 * 5 = 600$$

$$600 / 4 = 150$$

$$150 * 5 = 750$$

**14. 85, 106, 74, 119, ?, 136**

- A. 59
- B. 65
- C. 42
- D. 79
- E. 58

**Answer:** A

**Explanation:**

$$85 + 7 * 3 = 106$$

$$106 - 8 * 4 = 74$$

$$74 + 9 * 5 = 119$$

$$119 - 10 * 6 = 59$$

$$59 + 11 * 7 = 136$$

**15. 25, 35, 75, 165, ?, 575**

- A. 200
- B. 300
- C. 250
- D. 325
- E. 425

**Answer:** D

**Explanation:**

$$25 + 10 * 1^2 = 35$$

$$35 + 10 * 2^2 = 75$$

$$75 + 10 * 3^2 = 165$$





$$165 + 10 * 4^2 = 325$$

$$325 + 10 * 5^2 = 575$$

**Directions (16 – 17):** What value should come in the place of (?) in the following questions?

**16. 80 % of 240 =? + 119 – 3 \* √81**

- A. 90
- B. 100
- C. 80
- D. 70
- E. 60

**Answer:** B

**Explanation:**

$$80 \% \text{ of } 240 = ? + 119 - 3 * \sqrt{81}$$

$$192 = ? + 119 - 27$$

$$? = 100$$

**17.  $3\frac{5}{8} = 3\frac{1}{8} * 3\frac{y}{8}$**

- A. 3
- B. 5
- C. 8
- D. 4
- E. 6

**Answer:** D

**Explanation:**

$$3\frac{5}{8} = 3\frac{1}{8} * 3\frac{y}{8}$$

$$\frac{35}{8} * \frac{1}{8} = 3\frac{y}{8}$$

$$\frac{4}{8} = \frac{y}{8}$$

$$y = 4$$



**18. A piece of work has to be completed in 60 days, a number of men are employed but it is found that only half of the work is done in 40 days, then an additional 30 men were joined to complete the work on time. Initially how many men are there to work?**



- A. 30 men
- B. 26 men
- C. 24 men
- D. 34 men
- E. None of these

Answer: A

Explanation:

Let initially the no of men be x,

A piece of work has to be completed in 60 days

According to the question,

Men	days' work
-----	------------

X	40 $\frac{1}{2}$
---	------------------

(x + 30)	20 $\frac{1}{2}$
----------	------------------

Work = men \* days

$$\Rightarrow 40x \frac{1}{2} = (x + 30) * 20 \frac{1}{2}$$

$$\Rightarrow 40x = (x + 30) * 20$$

$$\Rightarrow 40x = 20x + 600$$

$$\Rightarrow 20x = 600$$

$$\Rightarrow x = 30 \text{ men}$$



**19. The ratio of efficiency of Ajay and Sneha is 6: 5. The ratio of number of days taken by Prabha to Sneha is 3: 2. Ajay takes 3 days less than Sneha, when Ajay and Sneha complete the work individually. Prabha and Sneha started the work and left after 3 days. The number of days taken by Ajay to finish the remaining work is?**

- A. 12 days
- B.  $9 \frac{3}{4}$  days
- C.  $10 \frac{5}{6}$  days
- D.  $11 \frac{1}{44}$  days
- E. None of these

Answer: C



**Explanation:**

The ratio of efficiency of Ajay and Sneha = 6: 5

The ratio of number of days taken by Ajay and Sneha = 5: 6

The ratio of number of days taken by Prabha and Sneha = 3: 2

Ratio of number of days taken by Ajay: Sneha: Prabha = 5: 6: 9

According to the question,

$$\Rightarrow \text{Sneha} - \text{Ajay} = 8 \text{ days}$$

$$\Rightarrow 6's - 5's = 3$$

$$\Rightarrow 1's = 3$$

Number of days taken to finish the whole work,

$$\Rightarrow \text{Ajay} = 15 \text{ days, Sneha} = 18 \text{ days, Prabha} = 27 \text{ days}$$

Work done by Prabha and Sneha in one day,

$$\Rightarrow \frac{1}{18} + \frac{1}{27} = \frac{5}{54} = \frac{1}{10.8}$$

Prabha and Sneha's two day work

$$\Rightarrow \frac{5}{54} * 3 = \frac{5}{18}$$

$$\text{Rest of the work} = \frac{13}{18}$$

The number of days taken by Ajay to finish the remaining work is,

$$\text{Number of days} = \frac{13}{18} * 15 = \frac{65}{6} = 10 \frac{5}{6} \text{ days}$$

**20. Ragu and Rajesh can separately do a piece of work in 12 and 15 days respectively. They worked together for 5 days, after which Rajesh was replaced by Rohit. If the work was finished in next 2 days, then the number of days in which Rohit alone could do the work?**

- A. 20 days
- B. 24 days
- C. 32 days
- D. 28 days
- E. None of these

**Answer:** B

**Explanation:**



Ragu and Rajesh worked together

$$\frac{1}{12} + \frac{1}{15} = (12 + 15) (12*15) = \frac{3}{20}$$

$$\text{Ragu and Rajesh's 5 days' work} = \frac{3}{20} * 5 = (3)$$

Remaining work  $\frac{1}{4}$  done by Ragu and Rohit

Ragu and Rohit finished it in 4 days

$$\frac{1}{4} * (\text{Ragu} + \text{Rohit})\text{'s whole work} = 2$$

$$(\text{Ragu} + \text{Rohit})\text{'s whole work} = 8$$

$$\text{Rohit's one day work} = \frac{1}{18} - \frac{1}{12} = \frac{1}{24}$$

Rohit alone can complete the work in 24 days

**21. 6 years ago, the ratio of the ages of Arun and Prathap is 7: 6. Present age of Rajeev is 10 years more than one – sixth of Prathap's present age. Find the ratio of present age of Prathap and Rajeev, if Arun's age after 6 years is 40 years?**

- A. 3: 2
- B. 2: 1
- C. 4: 5
- D. 1: 3
- E. None of these



**Answer:** B

**Explanation:**

6 years ago, the ratio of the ages of Arun and Prathap = 7: 6 (7x, 6x)

Present ages of Arun and Prathap = 7x + 6, 6x + 6

Present age of Rajeev =  $\frac{1}{6}$ \* Prathap's present age + 10

Arun's present age = 34 years

According to the question,

$$7x = 28$$

$$x = 4$$

$$\text{Prathap's present age} = 6x + 6 = 30$$



$$\text{Rajeev's present age} = \frac{1}{6} * 30 + 10 = 15$$

$$\text{Required ratio} = 30: 15 = 2: 1$$

**22. The ratio of present ages of Sri and Gowtham is 3: 4. Mahesh is 6 years older than Sri and two years younger than Gowtham. Find the sum of the present ages of Sri and Mahesh?**

- A. 48 years
- B. 50 years
- C. 52 years
- D. 54 years
- E. None of these

**Answer:** D

**Explanation:**

$$\text{Ratio of present ages of Sri and Gowtham} = 3: 4 (3x, 4x)$$

$$\text{Mahesh} = \text{Sri} + 6 = 3x + 6$$

$$\text{Mahesh} = \text{Gowtham} - 2 = 4x - 2$$

According to the question,

$$3x + 6 = 4x - 2$$

$$4x - 3x = 8$$

$$X = 8$$

$$\text{Present age of Sri} = 3x = 24 \text{ years}$$

$$\text{Present age of Mahesh} = 24 + 6 = 30 \text{ years}$$

$$\text{Required sum} = 24 + 30 = 54 \text{ years}$$



**23. The product of the ages of Asha and Nithi is 540. If twice the age of Asha is more than Nithi's age by 6 years, then find Asha's age?**

- A. 18 years
- B. 20 years
- C. 16 years
- D. 22 years
- E. None of these

**Answer:** A

**Explanation:**





Let the age of Asha and Nithi be  $x$  and  $y$  respectively,

$$x * y = 540$$

$$2 * x = y + 6$$

$$x = (y + 6) / 2$$

$$[(y + 6) / 2] * y = 540$$

$$y^2 + 6y = 1080$$

$$y^2 + 6y - 1080 = 0$$

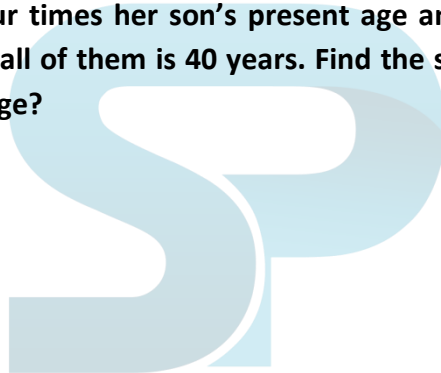
$$(y - 30)(y + 36) = 0$$

$$y = 30, -36 \text{ (-36 will be eliminated)}$$

$$\text{Asha's age} = \frac{540}{30} = 18 \text{ years}$$

**24. Naveena's present age is four times her son's present age and two fifth of her father's present age. The average present age of all of them is 40 years. Find the sum of Naveena's son's present age and Naveena's father's present age?**

- A. 92 years
- B. 74 years
- C. 88 years
- D. 86 years
- E. None of these



**Answer:** C

**Explanation:**

The ratio of present age of Naveena and her son's age = 4: 1 ( $4x, x$ )

Naveena's present age =  $\frac{2}{5}$  \* Naveena's father's present age

Naveena's father's present age =  $10x$

According to the question,

$$x + 4x + 10x = 120$$

$$15x = 120$$

$$x = \frac{120}{15}$$

$$x = 8$$



Naveena's father's present age =  $10x = 80$  years

Naveena's son's present age =  $x = 8$  years

Required sum =  $80 + 8 = 88$  years

**25. The ratio of B's age six years hence to C's present age is 5: 3. B is eleven years younger than A. If A's present age is twice the age of C, then find B's age, 4 years ago?**

- A. 13 years
- B. 15 years
- C. 17 years
- D. 16 years
- E. None of these

**Answer:** B

**Explanation:**

The ratio of B's age six years hence to C's present age = 5: 3 ( $5x, 3x$ )

Present ages of B to C =  $5x - 6, 3x$

Present ages of A to C = 2: 1 ( $2x, x$ )

Present ages of A, B and C =  $6x, 5x - 6, 3x$

$$B = A - 11$$

$$A - B = 11$$

$$6x - (5x - 6) = 11$$

$$6x - 5x + 6 = 11$$

$$x = 5$$

B's age, 4 years ago =  $5x - 6 - 4 = 25 - 10 = 15$  years

**26. The average age of girls in the class is 15 years. The average age of boys in the class also added, then the average becomes 18. If there are 18 boys in the class and the average age of boys in the class is 20, then find how many girls in the class?**

- A. 18
- B. 24
- C. 12
- D. 16
- E. None of these

**Answer:** C





**Explanation:**

Let the total number of girls in the class be  $x$ ,

$$15x + (20 \cdot 18) = (x+18) \cdot 18$$

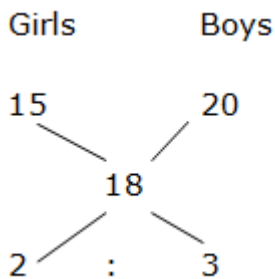
$$15x + 360 = 18x + 324$$

$$36 = 3x$$

$$x = 12$$

Total girls in the class is 12

**Shortcuts:**



$$3's = 18$$

$$1's = 6$$

$$\text{Total number of girls in the class} = 2's = 12$$

**27. The average marks of Raji in a certain examination is 85. If she got 20 more marks in Maths and 12 more marks in English, then the average becomes 89. Find the total number of subjects she studied?**

- A. 8
- B. 5
- C. 7
- D. 9
- E. None of these

**Answer:** A

**Explanation:**

Let the total number of subjects be  $x$ ,

$$\text{Average} = \text{Sum}$$

$$(85x + 20 + 12) / x = 89$$



$$85x + 32 = 89x$$

$$4x = 32$$

$$X = 8$$

Total number of subjects = 8

**28. The average salary of the whole employees in a company is Rs. 300 per day. The average salary of officers is Rs. 800 per day and that of clerks is Rs. 240 per day. If the number of officers is 30, then find the number of clerks in the company?**

- A. 180
- B. 160
- C. 220
- D. 250
- E. None of these

**Answer:** D

**Explanation:**

Let the number of clerks in the company be x,

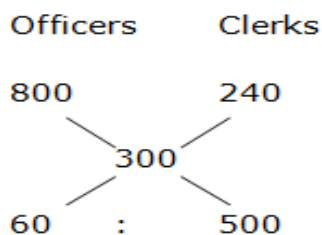
$$800 \cdot 30 + 240 \cdot x = 300(30 + x)$$

$$24000 + 240x = 9000 + 300x$$

$$15000 = 60x$$

$$X = \frac{15000}{60} = 250$$

Total number of clerks in the company = 250



$$\Rightarrow 3 : 25$$

$$3's = 30$$

$$1's = 10$$

Total number of clerks in the company = 25's = 250





**29. A certain sum of money lent out at simple interest amounts to Rs. 2400 in 4 years and Rs. 3000 in 6 years. Find the rate of interest per annum?**

- A. 20 %
- B. 18 %
- C. 25 %
- D. 15 %
- E. 12 %

**Answer:** C

**Explanation:**

In 4 years, Amount = 2400  
In 6 years, Amount = 3000

S.I for 2 years = 3000 – 2400 = 600

S.I for 1 year = 300

I for 6 years = 6\*300 = 1800

Principle = 3000 – 1800 = 1200

According to the question,

$(1200 \times 6 \times r) / 100 = 1800$

$$R = \frac{1800}{72} = 25 \%$$

**30. A bank offers 5% compound interest calculated on half-yearly basis. A customer deposits Rs. 1600 each on 1st January and 1st July of a year. At the end of the year, the amount he would have gained by way of interest is:**

- A. Rs.120
- B. Rs.121
- C. Rs.122
- D. Rs.123
- E. Rs.124

**Answer:** B

**31. The difference between compound interest and simple interest on an amount of Rs. 15,000 for 2 years is Rs. 96. What is the rate of interest per annum?**

- A. 6%
- B. 7%
- C. 8%
- D. 9%





E. 12%

Answer: C

Explanation:

Let the rate of interest per annum be R%

The difference between compound interest and simple interest on Rs. P for 2 years at R% per annum

$$= P (R/100)^2$$

$$15000 \left(\frac{R}{100}\right)^2 = 96 \Rightarrow 3 \left(\frac{R}{100}\right)^2 = 96 \Rightarrow R^2 = 64 \Rightarrow R = 8$$

Rate of interest per annum = 8%

**32. Vaishali got 40 % of total marks in an examination and failed by 5 marks. However, Preethi who took the same examination got 50 % of the total marks and got 10 marks more than the passing marks. What were the passing marks in the examination?**

- A. 65
- B. 73
- C. 68
- D. 78
- E. None of these



Answer: A

Explanation:

Let the Maximum marks be x,

Passing mark is equal for both the students. So,

$$\Rightarrow \frac{40}{100}x + 5 = \frac{50}{100}x - 10$$

$$\Rightarrow \frac{10}{100}x = 15$$

$$\Rightarrow x = 150$$

Maximum mark = 150

$$\text{Passing marks} = 150 \times \frac{40}{100} + 5 = 60 + 5 = 65$$

**33. In a poll, Raghu got 84% of the total valid votes. If 25 % of the total votes were declared invalid and the total numbers of votes is 884000, find the number of valid vote polled in favour of Raghu.**

A. 214320



- B. 556920
- C. 543640
- D. 212160
- E. None of these

Answer: B

Explanation:

$$\text{Total number of valid votes} = \frac{75}{100} 884000 = 663000$$

Percentage of votes polled in favour of Raghu = 84%

Therefore, the number of valid votes polled in favour of Raghu= 84% of 663000

$$= \frac{84}{100} \times 663000$$

$$= 556920$$

**34. Yuva gave 25% of a certain amount of money to Ram. From the money Ram received, he spent 20% on buying books and 35% on buying a watch. After the mentioned expenses, Ram has 2700 remaining. How much did Yuva have initially?**

- A. 16000
- B. 15000
- C. 24000
- D. 27000
- E. 20000

Answer: C

Explanation:

Yuva gave 25% of a certain amount of money to Ram

Ram=25% of Yuva

From the money Ram received, he spent 20% on buying books and 35% on buying a watch

$$\text{Remaining} = 100 - (20\% + 35\%) = 45\%$$

45% of amount = 2700

$$\Rightarrow \frac{45}{100} * X = 2700$$

$$\Rightarrow X = 6000$$

Ram's Total amount = 6000



Ram=25% of Yuva

$$6000 = \frac{25}{100} * Yuva$$

$$\Rightarrow Yuva = 24000$$

**35. A cartoon contains 7 red and 5 green apples. 3 apples are drawn at random. Find the probability that they are of the same colors.**

A.  $\frac{7}{44}$

B.  $\frac{9}{44}$

C.  $\frac{12}{44}$

D.  $\frac{3}{44}$

E. None of these

Answer: B

Explanation:

Let S be the sample space.

Then  $n(S)$  = no. of ways of drawing 3 apples out of 12

$$\Rightarrow 12C_3 = \frac{12*11*10}{3*2*1}$$

$$\Rightarrow 220$$

Let E = event of getting both apples of the same color. Then

$N(E)$  = no. of ways of drawing 3 apples out of 7 or 3 apples out of 5

$$= 7C_3 + 5C_3$$

$$= \frac{7*6*5}{3*2*1} + \frac{5*4*3}{3*2*1}$$

$$= 35$$

$$= 45$$

$$P(E) = n(E) / n(S)$$

$$= 45 / 220$$







$$= \frac{9}{44}$$

**36. 2 dice are thrown simultaneously. What is the probability that the sum of the numbers on the faces is divisible by either 3 or 5?**

- A.  $\frac{7}{36}$
- B.  $\frac{19}{36}$
- C.  $\frac{9}{36}$
- D.  $\frac{2}{7}$
- E. None of these

**Answer:** B

**Explanation:**

Clearly  $n(s) = 6 \times 6 = 36$

Let  $E$  be the event that the sum of the numbers on the 2 faces is divisible by either 3 or 5. Then

$E = \{(1,2), (1,4), (1,5), (2,1), (2,3), (2,4), (3,2), (3,3), (3,6), (4,1), (4,2), (4,5), (4,6), (5,1), (5,4), (5,5), (6,3), (6,4), (6,6)\}$

$N(E) = 19$

Hence  $P(E) = \frac{n(E)}{n(s)}$

$$= \frac{19}{36}$$

**37. From a pack of 52 cards one card is drawn at random. What is the probability that the card drawn is a six or a diamond?**

- A.  $\frac{17}{52}$
- B.  $\frac{4}{13}$
- C.  $\frac{9}{52}$
- D.  $\frac{3}{13}$
- E. None of these



Answer: B

Explanation:

Here  $n(S) = 52$

There are 13 diamond cards (including one six) and also 3 more sixes are there.

Let  $E$  = event of getting a six or a diamond

Then  $n(E) = 13 + 3$

$N(E) = 16$

Therefore  $P(E) = n(E) / n(S)$

$= 16 / 52$

$P(E) = \frac{4}{13}$

**38. 2 cards are drawn together at random from a pack of 52 cards. What is the probability of both the cards being jack?**

A.  $\frac{25}{5}$

B.  $\frac{4}{221}$

C.  $\frac{53}{256}$

D.  $\frac{1}{221}$

E. None of these

Answer: D

Explanation:

Let  $s$  be the sample space

Then  $n(S) = {}^{52}C_2$

$= 52 * 51 / 2 * 1$

$= \frac{2652}{2}$

$= 1326$





Let E = event of getting 2 jack cards out of 4

$$N(E) = {}_4C_2 = \frac{4 \cdot 3}{2 \cdot 1}$$

$$= \frac{12}{2}$$

$$= 6$$

$$P(E) = \frac{n(E)}{n(S)} = \frac{6}{1326}$$

$$= \frac{1}{221}$$

**39. In a bouquet, there are 5 red, 3 white and 7 orange roses. One rose is picked up randomly. What is the probability that is neither red nor orange?**

A.  $\frac{1}{3}$

B.  $\frac{1}{5}$

C.  $\frac{1}{8}$

D.  $\frac{1}{7}$

E. None of these



**Answer:** B

**Explanation:**

Total no. of roses = 5+3+7

$$= 15$$

Let E = event that the rose drawn is neither red nor orange

$$N(E) = 3$$

$$\text{Therefore } P(E) = \frac{n(E)}{n(S)}$$

$$= \frac{3}{15}$$

$$= \frac{1}{5}$$

The probability that is neither red nor orange is  $\frac{1}{5}$



40. A bag contains 4 red balls and 5 black balls. In how many ways can i make a selection so as to take at least 1 red ball and 1 black ball?

- A. 564
- B. 345
- C. 465
- D. 240
- E. None of these

Answer: C.

Explanation:

$$2^4 - 1 = 16 - 1 = 15$$

$$2^5 - 1 = 32 - 1 = 31$$

$$15 * 31 = 465$$

41. In how many ways can 7 beads be strung into necklace?

- A. 2520
- B. 5040
- C. 720
- D. 360
- E. None of these



Answer: D.

Explanation:

$$\text{No of way in Necklace} = \frac{(n-1)!}{2} = \frac{6!}{2}$$

$$= \frac{720}{2} = 360$$

42. Find the no of 3 digit numbers such that at least one of the digit is 6 (with repetitions)?

- A. 252
- B. 345
- C. 648
- D. 560
- E. None of these

Answer: A.

Explanation:

$$\text{Total no of 3 digit number} = 9 * 10 * 10 = 900$$



No of 3 digit number- none of the digit is 6 =  $8*9*9 = 648$

No of 3 digit number – at least one digit is 6 =  $900-648 = 252$

**43. In how many ways can 7 girls and 4 boys stand in a row so that no 2 boys are together?**

- A. 8467200
- B. 9062700
- C. 7407000
- D. 8407200
- E. None of these

**Answer:** A.

**Explanation:**

No of ways =  $7! * 8P_4$

$7! = 5040$

$8P_4 = 8*7*6*5 = 1680$

No of ways =  $5040*1680 = 8467200$

**44. In how many ways the letters of the word PERMUTATION be arranged?**

- A.  $\left(\frac{10!}{2!}\right)$
- B.  $10!$
- C.  $11!$
- D.  $\left(\frac{11!}{2!}\right)$
- E. None of these

**Answer:** D.

**Explanation:**

No of ways =  $\left(\frac{11!}{2!}\right)$

**45. Rahim went shopping to buy a Mobile, the shopkeeper asked him to pay 18% Tax if he wants a bill. If not you can get 7% discount on the actual price of the mobile. Then Rahim decided not to take the bill and paid Rs. 4650. By this how much money could Rahim saved on purchasing mobile?**

- A. Rs.250
- B. Rs.350
- C. Rs.650
- D. Rs.850
- E. Rs.1250



Answer: E

Explanation:

$$SP * \frac{93}{100} = 4650$$

$$SP = 5000$$

$$\text{Including tax} = 5000 + 900 = 5900$$

$$\text{Saving} = 5900 - 4650 = 1250$$

46. A seller bought 2750 Mangoes and 1210 Apples at the same price. He sells in such a way that he can buy 406 Mangoes with the sale of 322 Mangoes and he can buy only 289 Apples with the sale of 391 Apples. Then what is the overall profit percentage made by him?

- A. 0%
- B. 2%
- C. 5%
- D. 6%
- E. 10%

Answer: A

Explanation:

Cost of 2750 Mangoes = 1210 Apples

Total cost = 2420 Apples

$$\text{Given: } 406 = 322 \left(100 + \frac{x}{100}\right)$$

$$x = \frac{6}{23}\%$$

$$\text{Given: } 289 = 391 \left(100 + \frac{y}{100}\right)$$

$$y = \frac{6}{23}\% \text{ loss}$$

Overall profit:

$$2750 \text{ Mangoes} * 100 + \frac{6}{23} + 1210 \text{ Apples} * 100 - \frac{6}{23} = 2420 * \text{Apples} * 100 + \frac{p}{100}$$

$$P = 0\%$$

47. A hollow cylindrical tube is made of plastic is 4 cm thick. If the external diameter is 18 cm and length of the tube is 59cm, then find the volume of the plastic?





- A. 10380 cm<sup>3</sup>
- B. 10384 cm<sup>3</sup>
- C. 10440 cm<sup>3</sup>
- D. 10444 cm<sup>3</sup>
- E. None

Answer: B

Explanation:

$$R = 9, r = 5$$

$$V = \frac{22}{7} * 59(9^2 - 5^2) = 10384$$

**48. What is the radius of the circle whose area is equal to the sum of the areas of two circles whose radii are 20 cm and 21 cm?**

- A. 27m
- B. 28m
- C. 29m
- D. 25m
- E. 15m

Answer: C

Explanation:

$$\pi R^2 = \pi r_1^2 + \pi r_2^2$$

$$\pi R^2 = \pi (r_1^2 + r_2^2)$$

$$R^2 = (400 + 441)$$

$$R = 29$$

**49. Ramu started from A towards B at a speed of 20Km/hr and Raju started from B towards A. They crossed each other after one hour. Raju reached his destination 5/6 hour earlier than Ramu reached his destination. Then what is the distance between A and B?**

- A. 40 Km
- B. 50 Km
- C. 60 Km
- D. 80 Km
- E. Cannot be determined

Answer: B.

Explanation:





$$1 = \frac{x}{20} = D \frac{x}{s} 2$$

$$\frac{5}{6} = D \left( \frac{1}{20} \right) - 1/s 2$$

$$D = 50$$

**50. Two Cars started at same time, same place and towards same direction. First Car goes at uniform speed of 12Km/hr. Second Car goes at speed of 4 Km/hr in first hour and increases it speed by 1 Km/hr for every hour. Then what is the distance traveled by car B when the both the Cars meet for the first time?**

- A. 196 Km
- B. 198 Km
- C. 200 Km
- D. 204 Km
- E. None

**Answer:** D.

**Explanation:**

$$12 * x = \frac{x}{2} (2 * 4 + (x - 1) * 1)$$

$$X = 17$$

$$D = 17 * 12 = 204$$







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