

1. Akram has a certain average for 9 innings. In the tenth innings, he scores 100 runs thereby increasing his average by 8 runs. His new average is:
- A) 20
  - B) 21
  - C) **28**
  - D) 32

Answer:

Solution: Let Ajit's average be  $x$  for 9 innings. So, Ajit scored  $9x$  run in 9 innings. In the 10th inning, he scored 100 runs then average became  $(x+8)$ . And he scored  $(x+8)*10$  runs in 10 innings.

Now,

$$\rightarrow 9x + 100 = 10*(x+8)$$

$$\text{Or, } 9x + 100 = 10x + 80$$

$$\text{Or, } x = 100 - 80$$

$$\text{Or, } x = 20$$

$$\text{New average} = (x+8) = 28 \text{ runs.}$$

2. How many Permutations of the letters of the word APPLE are there?
- A) 60
  - B) 80
  - C) 100
  - D) 120

Answer:

APPLE = 5 letters.

But two letters PP is of same kind.

Thus, required permutations,

$$= \frac{5!}{2!}$$

$$= \frac{120}{2}$$

$$= 60.$$

3. Find the average of first 97 natural numbers.
- A) 47.5
  - B) 48.5
  - C) **49.5**
  - D) 50.5

Answer:

Average of 1st  $n$  natural number is given by  $= \frac{[n*(n+1)]/2}{n}$

Average of 1st 97 natural number is given by  $= \frac{[(97*(97+1)]/2}{97} = 49$

**2nd Method:**

These numbers are in AP series, so average,

$$= \frac{(\text{sum of corresponding term})}{2}$$

$$= \frac{(1+97)}{2} = 49$$

Or,  $(2+96)/2 = 49$   
Or,  $(3+95)/2 = 49$  And so on.

4. Out of 450 students of a school, 325 play football, 175 play cricket and 50 neither play football nor cricket. How many students play both football and cricket?
- A. 75  
B. 100  
C. 125  
D. 150

**اسلام علیکم۔**

کسی بھی قسم کے اور نوٹس حاصل کرنے کے لئے ہماری پوسٹ پر کمنٹس میں لکھ دیں، آپ کو بھیج دیئے جائیں گے۔ اس کے علاوہ اپنی رائے کا اظہار ضرور کریں، آپ کی رائے ہمارے لئے بہت اہم ہے۔ comments کے لئے کلک کریں۔

(نوٹ: یہ نوٹس صدقہ جاریہ سمجھ کر اپنے دوستوں سے شیئر ضرور کریں۔ کنجوسی کا ہرگز مظاہرہ نہ کریں۔ ”دوسروں کا احساس کریں تاکہ دوسرے بھی آپ کا احساس کریں“)

آپ کا شکریہ

**Answer:** Option B

**Explanation:**

Students who play cricket,  $n(A) = 325$

Students who play football,  $n(B) = 175$

Total students who play either or both games,

$=n(A \cup B) = 450 - 50 = 400$  Required Number,  $n(A \cap B) = n(A) + n(B) - n(A \cup B) = 325 + 175 - 400 = 100$

5. In an examination, 34% of the students failed in mathematics and 42% failed in English. If 20% of the students failed in both the subjects, then find the percentage of students who passed in both the subjects.
- A. 40%  
B. 42%  
C. 44%  
D. 46%

**Answer:** Option C

**Explanation:**

Failed in mathematics,  $n(A) = 34$

Failed in English,  $n(B) = 42$

$n(A \cup B) = n(A) + n(B) - n(A \cap B) = 34 + 42 - 20 = 56$  Failed in either or both subjects are 56  
Percentage passed =  $(100 - 56)\% = 44\%$

6. Due to an increase in 30% in the price of eggs, 3 eggs less are available for Rs. 7.80. Find the present rate of eggs per dozen.

A. Rs. 9.36 Answer

B. Rs. 10.36

C. Rs. 11.36

D. Rs. 12.36

7. Two numbers are less than third number by 30% and 37% respectively. How much percent is the second number less than by the first

A. 8%

B. 9%

C. 10%

D. 11%

**Answer:** Option Correct Answer: C

**Explanation:**

Let the third number is x.

then first number = (100-30)% of x

= 70% of x =  $7x/10$

Second number is  $(63x/100)$

Difference =  $7x/10 - 63x/100 = 7x/10$

So required percentage is, difference is what percent of first number

=>  $(7x/100 * 10/7x * 100) \% = 10\%$

8. How many litres of pure acid are there in 8 litres of a 20% solution.

A) 1.5

B) 1.6

C) 1.7

D) 1.8

**Answer:** Option B

**Explanation:**

Question of this type looks a bit typical, but it is too simple, as below...

It will be  $8 * 20/100 = 1.6$

9. The speed of the train going from Karachi to Lahore is 100 km/h while when coming back from Lahore to Karachi, its speed is 150 km/h. find the average speed during whole journey.

A) 125 km

B) 136 km

C) 120 km

D) 138 km

**Answer:** Option C

**Solution:**

Average speed,

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

$$= (2 \cdot 100 \cdot 150) / (100 + 150)$$

$$= (200 \cdot 150) / 250$$

$$= 120 \text{ km/hr.}$$

10. The average age of three boys is 15 years. If their ages are in ratio 3:5:7, the age of the youngest boy is:
- A) 9 years  
 B) 18 years  
 C) 21 years  
 D) 27 years

**Answer: Option A**  
 Solution: Sum of ages of three boys = 45 years  
 Now,  $(3x + 5x + 7x) = 45$   
 Or,  $15x = 45$   
 Or,  $x = 3$   
 So, age of youngest boy =  $3x = 3 \cdot 3 = 9$  years.

11. In how many ways 4 boys and 3 girls can be seated in a row so that they are alternate.
- A) 140  
 B) 144  
 C) 122  
 D) 188

**Answer: Option B**  
 Solution: Let the Arrangement be,  
**B G B G B G B**  
 4 boys can be seated in 4! Ways.  
 Girl can be seated in 3! Ways.  
 Required number of ways,  
 $= 4! \cdot 3! = 144$ .

12. The average of a group of men is increased by 5 years when a person aged of 18 years is replaced by a new person of aged 38 years. How many men are there in the group?
- A) 2  
 B) 4  
 C) 6  
 D) 8

**Answer: Option B**  
 Solution: Let N be the no. of persons in the group.  
 Required number of person is given by;  
**Member in group\* aged increased = difference of replacement**  
 $N \cdot 5 = 38 - 18$   
 Or,  $5N = 20$   
 Or,  $N = 4$ .

13. In a boat there are 8 men whose average weight is increased by 1 kg when 1 man of 60 kg is replaced by a new man. What is weight of new comer?
- A) 65  
B) 67  
C) 68  
D) 78

**Answer: Option C**

**Solution:** Member in group \* age increased = difference of replacement

Or,  $8*1 = \text{new comer} - \text{man going out}$

Or, new comer =  $8+60$ ;

Or, new comer = 68 years.

14. The average of 25 results is 18. The average of first 12 of those is 14 and the average of last 12 is 17. What is the 13th result?
- A) 72  
B) 74  
C) 76  
D) 78

**Answer: Option D**

**Solution:** Sum of 1st 12 results =  $12*14$

Sum of last 12 results =  $12*17$

13th result = x (let)

Now,

$12*14+12*17+x = 25*18$

Or,  $x = 78$ .

15. If number x is 10% less than another number y and y is 10% more than 125, then find out the value of x
- A) 123.55  
B) 123.65  
C) **123.75 Correct Answer**  
D) 123.85

16. In a party every person shakes hands with every other person. If there are 105 hands shakes, find the number of person in the party.
- A) 12  
B) 15  
C) 18  
D) 20

**Answer: Option B**

**Solution:** Let n be the number of persons in the party. Number of hands shake = 105; Total number of hands shake is given by  ${}^nC_2$ .

Now, according to the question,

${}^nC_2 = 105$ ;

Or,  $n!/[2!*(n-2)!] = 105$ ;

Or,  $n*(n-1)/2 = 105$ ;

Or,  $n^2-n = 210$ ;

Or,  $n^2 - n - 210 = 0$ ;  
 Or,  $n = 15, -14$ ;  
 But, we cannot take negative value of  $n$ .  
 So,  $n = 15$  i.e. number of persons in the party = 15.

17. If  $x\%$  of  $y$  is 100 and  $y\%$  of  $z$  is 200, then find the relation between  $x$  and  $z$ .

- A.  $z = x$
- B.  $2z = x$
- C.  $z = 2x$
- D. None of above

**Answer:** Option C

**Explanation:**

It is,  $y\%$  of  $z = 2(x\%$  of  $y)$

$$\Rightarrow yz/100 = 2xy/100$$

$$\Rightarrow z = 2x$$

18. If 15% of 40 is greater than 25% of a number by 2, the number is

- A. 14
- B. 16
- C. 18
- D. 20

**Answer:** Option B

**Explanation:**

$$15/100 * 40 - 25/100 * x = 2 \text{ or } x/4 = 4 \text{ so } x = 16$$

19. A batsman scored 120 runs which included 3 boundaries and 8 sixes. What percent of his total score did he make by running between the wickets.

- A. 40%
- B. 50%
- C. 60%
- D. 70%

**Answer:** Option Correct Answer:

**Explanation:**

$$\text{Number of runs made by running} = 120 - (3 \times 4 + 8 \times 6)$$

$$= 120 - (60)$$

$$= 60$$

Now, we need to calculate 60 is what percent of 120.

20. Three candidates contested an election and received 1136, 7636 and 11628 votes respectively.

What percentage of the total votes did the winning candidate got

- A. 55%
- B. 56%
- C. 57%
- D. 58%

**Answer:** Option C

**Explanation:**

Total number of votes polled =  $(1136 + 7636 + 11628) = 20400$   
 So, Required percentage =  $11628/20400 * 100 = 57\%$

21. The number of positive integers which can be formed by using any number of digits from 0,1,2,3,4,5 without repetition.
- A) 1220  
 B) 1530  
 C) 1630  
 D) 1700

**Answer: Option C**

**Solution:** One digit positive numbers = 5.  
 Two digit positive numbers = 25.  
 Three digit positive numbers = 100.  
 4 digit positive numbers = 300.  
 5 digit positive numbers = 600.  
 Six digit positive numbers = 600.  
 Total positive numbers,  
 =  $5+25+100+300+600+600$   
 = 1630.

22. In how many ways can six different rings be worn on four fingers of one hand?
- A) 10  
 B) 12  
 C) 15  
 D) 16

**Answer: Option C**

**Solution:**  
 Required number of ways,  
 =  ${}^6C_4$   
 =  $(6 * 5) / 2 = 15$  ways.

23. If A and B together can complete a piece of work in 15 days and B alone in 20 days, in how many days can A alone complete the work?
- A) 30  
 B) 45  
 C) 60  
 D) 75

**Answer: Option c**

**Solution: 1st method:** A and B complete a work in = 15 days;  
 One day's work of (A+B) =  $1/15$ ;  
 B complete the work in = 20 days;  
 One day's work of B =  $1/20$ ;  
 Then, A's one day's work =  $1/15 - 1/20 = (4-3)/60 = 1/60$ ;  
 Thus, A can complete the work in = 60 days.

24. A and B together can complete a work in 3 days. They start together but after 2 days, B left the work. If the work is completed after two more days, B alone could do the work in
- A) 5 Days  
 B) 6 Days  
 C) 9 Days  
 D) 10 Days

**Answer: Option B**

**Solution:**

(A+B)'s one day's work =  $\frac{1}{3}$  part;

(A+B) works 2 days together =  $\frac{2}{3}$  part;

Remaining work =  $1 - (\frac{2}{3}) = \frac{1}{3}$  part;

$\frac{1}{3}$  part of work is completed by A in two days;

Hence, one day's work of A =  $\frac{1}{6}$ ;

Then, one day's work of B =  $\frac{1}{3} - \frac{1}{6} = \frac{1}{6}$ ;

So, B alone can complete the whole work in 6 days.

25. An engineer undertakes a project to build a road 15 km long in 300 days and employs 45 men for the purpose. After 100 days, he finds 2.5 km of the road has been completed. Find the (approx.) number of extra men he must employ to finish the work in time.
- A) 60  
 B) 64  
 C) 68  
 D) 78

**Answer: Option D**

**Solution: Variation Method:**

In 100 days only 2.5 km road i.e. 16.66 % of work has been completed.

Men Days Road (km)

45 100 ↓ 2.5

X ↑ 200 12.5 ↑

**Arrows show the directions of variation of quantity with respect to each other.**

$\frac{x}{45} = \frac{100 \times 12.5}{200 \times 2.5}$ ;

$x = 113$  men;

Required men to be increased,

$= 113 - 45 = 68$ .

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