Statement Test 5

1. A shopkeeper marks a table and a chair 40% and 30% above the cost price respectively. He sold the table at a discount of 25% and the chair at two successive discounts of 10% and 11.11%. If the cost price of the table is Rs. 520 and the cost price of the chair is Rs. 400, then what will be the total profit of the shopkeeper by selling 12 tables and 48 chairs?
(A) Rs. 1060 (B) Rs. 1070 (C) Rs. 1050 (D) Rs. 1080 (E) None of these

2. Vishal and Vinod started a business with an investment of Rs. 40000 and Rs. x respectively. Vishal left the business after 8 months. If Vishal's share is Rs. 7400 out of the total profit of Rs. 16280 from the business after 1 year, then find the value of x.
(A) 32000 (B) 30000 (C) 28000 (D) 26000 (E) None of these

3. Chandan spends 20% of his monthly income on rent, 25% of the remaining on studies and 40% of the remaining on household expenses and deposits the remaining amount in the bank. If the difference between the amount deposited in the bank and the amount spent on rent is Rs. 2880, then find the annual salary of Chandan.
(A) Rs. 218000 (B) Rs. 216000 (C) Rs. 216000 (D) Rs. 21200 (E) None of these

4. The perimeter of a rectangle is 48 cm less than the perimeter of a square whose side is 42 cm. Find the difference between the area of the rectangle and the square, If the length of the rectangle is 12 cm more than its breadth.
(A) 800 cm2 (B) 900 cm2 (C) 850 cm2 (D) 750 cm2 (E) None of these

5. Rs. 18960 is invested by Piyush in scheme M at 12.5% per annum simple interest for 4 years. If the amount received from scheme M is invested in scheme N at 15% per annum compound interest for 2 years, then find the difference between the amount of interest received from scheme M and the amount of interest received from scheme N.
(A) Rs. 312.5 (B) Rs. 304. 8 (C) Rs. 309.3 (D) Rs. 308.1 (E) None of these

6. The ratio of milk and water in a container is 9 : 4. 52 liters of the mixture is sold and 18 liters of pure milk and 23 liters of water are added to the remaining mixture, then the ratio of milk and water in the final mixture becomes 18 : 11. Find the total volume of the initial mixture.
(A) 152 L (B) 154 L (C) 158 L (D) 158 L (E) None of these

7. Ram and Shyam started a business with initial investment of Rs. 48000 and Rs. 60000. After 3 months Ram withdrew Rs. 8000 and after 5 more months Shyam withdrew Rs. 10000. If the total profit at the end of 1 year is Rs. 20720, then find the profit share of Ram.
(A) Rs. 8860 (B) Rs. 8820 (C) Rs. 8840 (D) Rs. 8880 (E) None of these

8. Ramesh alone can do a piece of work in 115 days. Suresh and Lokesh together can do the same work in 80 days. If Lokesh can complete 75% of the same work in 69 days, then find the time taken by Ramesh and Lokesh together to complete 90% of the whole work?
(A) 46 days (B) 45 days (C) 50 days (D) 30 days (E) None of these

9. A and B have pastry in the ratio of 8 : 9 and C and D have pastry in the ratio of 3 : 5. A has 30 more pastry than C and sum of pastry of C and D is 2 times of number of pastry A have, then what is the average number of pastry A, B, C and D have?
(A) 123.75 (B) 172.12 (C) 156.14 (D) 141.85 (E) None of these

10. Suman's father and mother are 19 years and 15 years respectively elder to him. Suman's brother is 5 years younger to her. If the sum of present ages of her mother, father and brother is 98 years, then what will be the age of Suman's after 8 years from now?
(A) 42 years (B) 31 years (C) 19 years (D) 22 years (E) None

11. Average weight of a group of 'x' people increased by 0.5 kg, when a person weighing 45 kg joined the group while the average weight increased by 2 kg when two persons weighing 54 kg each, joined the group. Find the value of 'x'.
(A) 10 (B) 15 (C) 8 (D) 12 (E) None of these

12. Out of the total number of players in a ground, 41.66% belong to Jaipur, out of remaining players 12.5% belong to Pune and out of remaining players 58.33% belong to Indore. If the remaining players in the ground which is 735 belong to Amritsar, then find number of players who belong to Jaipur.
(A) 1440 (B) 1620 (C) 1540 (D) 1920 (E) None of these

13. Ratio of present ages of Mahima to that of Bhavna is 8 : 9. Mahima's age 8 years ago from now was exactly half of her mother's age 6 years ago from now as well as her uncle's age 8 years ago from now. If the present average age of all four is 44.5, then find the present age of Bhavna.
(A) 32 years (B) 36 years (C) 34 years (D) 52 years (E) None of these

14. Mixture P contains only Water and Spirit in the ratio 8 : 13, respectively. 60% of this mixture is taken out and is mixed with 240 ml of mixture Q, in which Water and Spirit is in the ratio 9 : 7, respectively. If the ratio of quantity of Water and Spirit in the resultant mixture is 17 : 20, respectively, then find the initial quantity of mixture P.
(A) 500 ml (B) 525 ml (C) 550 ml (D) 575 ml (E) None of these

15. P, Q, and R individually can do a piece of work in 'x' days, 'x + 5' days, and 'y' days, respectively. Q and R together can complete the work in 12 days, while P and R together can complete the work in 10 days. If sum of the number of days taken by P alone, Q alone and R alone to complete the work is 65 days, then in how many days will P, Q, and R together complete the work? A. 17/2 days B. 15 days C. 20/3 days D. 24 days E. None of these

16. Pipes A, B and C empty a tank. The number of hours taken by pipe B while working individually is 5/2 of the number of hours taken by pipe A while working individually and the number of hours taken by pipe C is 7/5 of the number of hours taken by pipe B while working individually. If the sum of the number of hours taken by A, B and C while working individually, to empty the tank is 28 hours, then in how many hours can A and C empty the tank while working together? A. 15/7 hours B. 64/11 hours C. 20/3 hours D. 28/9 hours E. None

17. A space research company wants to sell its two products A and B. If the product A is sold at 20% loss and the product B at 30% gain, the company will not lose/gain anything from this trade. If the product A is sold at 15% loss and the product B at 15% gain, the company will lose Rs. 6 million in the deal. What is the cost price of product B?
(a) Rs. 140 million (b) Rs. 120 million (c) Rs. 100 million (d) Rs. 80 million (e) Rs. 90 million

18. A tradesman marked up the price of goods at 30% above the cost price. He sells half the stock at this price, one quarter of his stock at a discount of 15% on the marked price and remaining one quarter at a discount of 30% on the marked price. Find the gain percentage in this whole trade.
(a) 14.875% (b) 15.375% (c) 15.575% (d) 16.375% (e) 16.258%

19. The dimensions of a field are 20 m and 9 m. A pit 10 m long, 4.5 m wide and 3 m deep is dug in one corner of the field and the earth (mud) removed has been evenly spread over the remaining area of the field. What will be the rise the height of field as a result of this operation ?
(a) 1.5 m (b) 2 m (c) 3 m (d) 4m (e) 1 m

20. Apurv and Apoorva started a business together with an investment of Rs. 2400 and Rs. 3000, respectively. After 3 months, Lucky joined them with an investment 25% less than the initial investment of Apurv. If after a year, they received a total profit of Rs. 5400, which of the following statement is true regarding the profit share of Apoorva?
A.Less than profit share of Apurv B.Less than profit share of Lucky C.Equal to the initial investment of Apurv D.Equal to the initial investment of Apoorva E.Equal to the initial investment of Lucky

21. Two fair dice are rolled simultaneously. The probability of getting a sum of _____ on the faces of dice is ____. The values given in which of the following options will fill the blanks in the same order in which is it given to make the statement true: A. 6, (1/6) B. 7, (1/6) C. 8, (1/6)
A.Only (A) B.Only (B) C.Only (C) D.Only (A) and (B) E.Only (B) and (C)

22. 'A' can complete 20% of a work in 4 days and 20% less efficient than 'B'. Both of them worked alternately for 16 days starting with 'A' and then 'B' left the work. The remaining work is completed by 'A' along with 'C' in 1 day. In how many days, can 'B' and 'C' together complete 67.5% of the work? A.6 days B.10 days C.4 days D.8 days E.12 days

23. Rajat has to cover a distance of 340 km. He travelled with a speed of 'x' km/hr for 1st 1.2 hours. He then increased his speed by 1/3rd and travelled for 2.8 hours. The distance covered by him in the remaining time is 50 km less than the distance covered by him in last 2.8 hours. Find the distance covered by Rajat in 1st 1.2 hours.
A.54 km B.60 km C.84 km D.48 km E.72 km

24. Out of her total income, Kriti invests Rs. 8000 in mutual funds. Out of the remaining income, she spends 10% on groceries, 7.5% on transportation which is Rs. 5450 less than the amount spent by her on rent. If after all these spending, Kriti is left with Rs. 20050, then find her spending on rent. A.Rs. 8000 B.Rs. 6400 C.Rs. 5600 D.Rs. 6000 E.Rs. 4800

25. The sum of the speeds of boat 'A' and boat 'B' in still water is 48 km/hr such that the speed of boat 'B' in still water is ____ km/hr and the speed of the current is 12 km/hr. The time taken by the boat 'A' to cover 153 km in downstream is _____ hours. The values given in which of the following options will fill the blanks in the same order in which is it given to make the statement true: I. 26, 4.5 II. 30, 5.1 III. 43, 9. A.Only I and III B.Only I and II C.All I, II and III D.Only I E.None

1. Ans. (D)
Total Profit = 520 × 12 × (1.4 × 0.75 - 1) + 400 × 48 × (1.3 × 0.9 × 8/9 - 1)
= 6240 × 0.05 + 19200 × 0.04
= 312 + 768 = Rs. 1080
2. Ans. (A)
(40000 × 8)/(x × 12) = 7400/(16280 - 7400)
80000/3x = 7400/8880 = 5/6
x = 80000 × 2/5 = 32000
3. Ans. (B)
Monthly Salary = x Rs.
Amount spent on Rent = 0.2x Rs.
Amount deposited in bank
= x × 0.8 × 0.75 × 0.6 = 0.36x
0.36x - 0.2x = 2880
0.16x = 2880
x = 18000 Rs.
Annual Salary of Chandan
= 18000 × 12 = Rs. 216000
4. Ans. (B)
Perimeter of Square = 42 × 4 = 168 cm
Perimeter of Rectangle
= 168 - 48 = 120 cm
Length of Rectangle = (120/2 + 12)/2
= (60 + 12)/2 = 72/2 = 36 cm
Breadth of Rectangle = 36 - 12 = 24 cm
Area of Square = 422 = 1764 cm2
Area of Rectangle = 24 × 36 = 864 cm2
Difference = 1764 - 864 = 900 cm2
5. Ans. (D)
Interest received from scheme M
= 18960 × 0.125 × 4
= 18960 × 0.5 = 9480 Rs.
Amount received from scheme N
= (18960 + 9480) × (1.152 - 1)
= 28440 × 0.3225 = 9171.9Rs,
Difference = 9480 - 9171.9 = Rs. 308.1
6. Ans. (C)
Initially, Milk = 9x L, Water = 4x L
In 52 L mixture, Milk = 52 × 9/13 = 36 L, Water = 52 × 4/13 = 16 L
(9x - 36 + 18)/(4x - 16 + 23) = 18/11
11 × (9x - 18) = 18 × (4x + 7)
11x - 22 = 8x + 14
3x = 36
x = 12
Initial Volume of mixtur
= 9x + 4x = 13 × 12 = 156 L
7. Ans. (B)
Investment of Ram
= 48000 × 12 - 8000 × 9 = 504000 Rs.
Investment of Shyam
= 60000 × 12 - 10000 × 4 = 680000 Rs.
Profit Ratio, Ram : Shyam
= 504000 : 680000 = 63 : 85
Profit Share of Ram
= 20720 × 63/148 = Rs. 8820
8. Ans. (A)
R 115 16
S + L 80 } 1840 {23
L 92 20
Ramesh & Lokesh complete 90% of work in = (0.9 × 1840)/(16 + 20)
= 0.9 × 1840/36 = 46 days
9. Ans. (A)
A have = 8x, B have = 9x C have
= 8x × 2 × 3/8 = 6x D have
= 8x × 2 × 5/8 = 10x 8x – 6x
= 30 2x = 30 x = 15 Average of Pastry
= (8x + 9x + 6x + 10x)/4
= 33x/4 = 8.25 × 15 = 123.75
10. Ans. (B)
Age of Suman = x years Age of Father
= (x + 19) years Age of Mother
= (x + 15) years Age of Brother
= (x – 5) years (x + 19) + (x + 15) + (x – 5)
= 98 3x = 98 – 29 = 69 x
= 23 Age of Suman after 8 years
= 23 + 8 = 31 years
11. Ans. (B)
Average weight of group = y kg
x × y + 45 = (x + 1) × (y + 0.5)
xy + 45 = xy + 0.5x + y + 0.5
0.5x + y = 44.5
x × y + 54 × 2 = (x + 2) × (y + 2)
xy + 108 = xy + 2x + 2y + 4
2x + 2y = 104
x + y = 52
x - 0.5x = 52 - 44.5
0.5x = 7.5
x = 15
12. Ans. (A)
Total players in ground
= 735/(7/12 × 7/8 × 5/12)
= 735 × 1152/245 = 3456
Player belong to Pune
= 3456 × 5/12 = 1440
13. Ans. (B)
At present, Age of Mahima = 8x years Age of Bhavna = 9x years Age of Mahima's mother
= (8x - 8) × 2 + 6 = (16x - 10) years Age of Mahima's uncle = (8x - 8) × 2 + 8 = (16x - 8)

years 8x + 9x + (16x - 10) + (16x - 8) = 44.5 × 4 49x = 178 + 18 = 196 x = 4 Present age of Bhavna = 9 × 4 = 36 years

14. Ans. (B)

Initially in mixture P, Water = 8x ml, Spirit = 13x ml (0.6 × 8x + 240 × 9/16)/(0.6 × 13x + 240 × 7/16) = 17/20 20 × (4.8x + 135) = 17 × (7.8x + 105) 96x + 2700 = 132.6x + 1785 36.6x = 915 x = 25 Total quantity of mixture P = 8x + 13x = 21 × 25 = 525 ml

15. Solution: C

Since, Q and R together can complete the work in 12 days.
So, {1/(x + 5)} + (1/y) = 1/12
(y + x + 5)/{(x + 5)× y} = 1/12
12y + 12x + 60 = xy + 5y
12x + 7y + 60 = xy ----------(i)
Also, P and R together do the work in 10 days.
So, (1/x) + (1/y) = 1/10
(x + y)/xy = 1/10
10x + 10y = xy ----------(ii)
From (i) and (ii),
12x + 7y + 60 = 10x + 10y
60 = 3y – 2x ----------(iii)
It is given that sum of the number of days taken by P alone, Q alone and R alone to the work is 65 days.
So, x + x + 5 + y = 65
2x + y = 60
y = 60 – 2x ----------(iv)
Solving eq. (iii) and eq. (iv), we get
60 = 3 × (60 – 2x) – 2x
60 = 180 – 6x – 2x
8x = 120
x = 15
y = 60 – 2x = 30 days
Part of the work done by P, Q, and R together in one day
= (1/15) + (1/20) + (1/30) = (4 + 3 + 2)/60 = 9/60
Therefore, required time taken to complete the work = 60/9 = 20/3 days
Hence, option c.

16. Solution D

Let the number of hours taken by A to empty the tank be ‘x’ hours.
Then the number of hours taken by pipe B = 5x/2 and the number of hours taken by pipe C
= 7/5 * 5x/2 = 7x/2 So, x + 5x/2 + 7x/2 = 28 x = 4
So, number of hours taken by A and C to empty the tank is 4 hours and 14 hours respectively.
Number of hours taken by A and C to empty the tank while working together = 1/(1/4 + 1/14) = 1/(9/28) = 28/9 hours
Hence, option d.

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S1. Ans.(d)

Sol. Total loss = total gain
∴ loss on A = gain on B
⇒ 20% of A = 30% of B ⇒ A/B = 3/2
Let cost of product A = $3x$ and cost of product B = $2x$
According to the question,

$$3x \times \frac{15}{100} - 2x \times \frac{15}{100} = 6$$

$$\Rightarrow 45x - 30x = 600 \Rightarrow x = \frac{600}{15} = 40$$

Hence, cost of product B = 2 × 40 = 80 million

S2. Ans.(b)

Sol.
Total cost (assume) = 100

$$\text{Recovered amount} = 65 + 0.85 \times \frac{130}{4} + 0.7 \times \frac{130}{4} = 65 + 27.625 + 22.75 = 115.375$$

Hence, profit percent = 15.375%

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S8. Ans.(e)

Sol.
Volume of earth removed = 10 × 4.5 × 3
= 135m^3
Remaining area = $[20 \times 9 - 10 \times 4.5] = 180 - 45 = 135\ m^2$
Let, rise in height be h m
Therefore,
$h \times 135 = 135$
$h = 1$m

20. Solution

Investment of Lucky = (100 – 25)% of 2400 = 0.75 × 2400 = Rs. 1800
Ratio of profit Share of Apurv: Apoorva: Lucky = (2400 × 12): (3000 × 12): (1800 × 9) = 28800: 36000: 16200 = 16: 20: 9
Therefore, profit share of Apoorva = [20/(16 + 20 + 9)] × 5400 = Rs. 2400
Hence, option c.

21. Solution

A. 6, (1/6)
Number of favourable outcomes = (1, 5), (5, 1), (2, 4), (4, 2), (3, 3)
Total outcomes = 36
Therefore, the probability of getting a sum of 6 on the faces of dice is (5/36).
B. 7, (1/6)
Number of favourable outcomes = (1, 6), (6, 1), (2, 5), (5, 2), (4, 3), (3, 4)
Total outcomes = 36
Therefore, the probability of getting a sum of 7 on the faces of dice is (6/36) = 1/6
C. 8, (1/6)
Number of favourable outcomes = (3, 5), (5, 3), (2, 6), (6, 2), (4, 4)
Total outcomes = 36
Therefore, the probability of getting a sum of 8 on the faces of dice is (5/36).
Hence, option b.

22. Solution

Time taken by ‘A’ to complete the whole work alone = 4/0.2 = 20 days
Time taken by ‘B’ to complete the whole work alone = 0.8 × 20 = 16 days
Let the total work = 80 units
Efficiency of ‘A’ = 80/20 = 4 units/day
Efficiency of ‘B’ = 80/16 = 5 units/day

Work completed in 2 days = (5 + 4) = 9 units
Work completed in 16 days = 9 × 8 = 72 units
Remaining work = 80 – 72 = 8 units
Let the efficiency of 'C' be 'x' units/day
According to the question,
(4 + x) = 8
Or, x = 4 units/day
Time taken by 'B' and 'C' to complete 67.5% of the work together = (0.675 × 80)/(5 + 4) = 6 days
Hence, option a.

23. Solution

Case 1: Both the cards drawn are King
Required probability = ${}^{4}C_{2}/{}^{52}C_{2}$ = 1/221
Case 2: Both the cards drawn are Jack
Required probability = ${}^{4}C_{2}/{}^{52}C_{2}$ = 1/221
Therefore the desired probability = 1/221 + 1/221 = 2/221
Hence, option c.

24. Solution

According to the question,
1.2x + (4x/3) × 2.8 + (4x/3) × 2.8 – 50 = 340
Or, (26x – 150) = 340 × 3
Or, 26x = 1170
x = 1170/26 = 45 km/hr
Therefore, distance covered in 1^{st} 1.2 hours = 45 × 1.2 = 54 km
Hence, option a.

25. Solution

For I:
Speed of boat 'B' in still water = 26 km/hr
Therefore, speed of boat 'A' in still water = 48 – 26 = 22 km/hr
Downstream speed of the boat = 22 + 12 = 34 km/hr
Time taken to cover 153 km in downstream = 153/34 = 4.5 hours
Therefore, I is true.
For II:
Speed of boat 'B' in still water = 30 km/hr
Therefore, speed of boat 'A' in still water = 48 – 30 = 18 km/hr
Downstream speed of the boat = 18 + 12 = 30 km/hr
Time taken to cover 153 km in downstream = 153/30 = 5.1 hours
Therefore, II is true.
For III: Speed of boat 'B' in still water = 43 km/hr
Therefore, speed of boat 'A' in still water = 48 – 43 = 5 km/hr
Downstream speed of the boat = 5 + 12 = 17 km/hr
Time taken to cover 153 km in downstream = 153/17 = 9 hours
Therefore, III is true.
Hence, option c.