Statement Test 3

1. Roshni deposited three different amount in three different schemes-A, B and C for 2 years each in the ratio of 4:3:5, scheme A and B offers simple interest at the rate of 8% and 12% respectively and scheme C offers compound interest at the rate of 10% per annum. If the total interest obtained by Roshni is Rs.7712, then find the total amount deposited by her in all the schemes together?
1.Rs.38400 2.Rs.36700 3.Rs.33400 4.Rs.40500 5.Rs.39700

2. Deepika, Kavitha and Vinolin started the business with the investment in the ratio of 6:7:8. After 4 months, Deepika invested Rs.8000 more and Vinolin withdrew Rs.4000. After 4 more months, Kavitha invested Rs.3000 more. At the end of the year, the profit shares of Deepika, Kavitha and Vinolin in the ratio of 17:12:8 respectively. Find the initial investment of Vinolin?
1.Rs.12000 2.Rs.16000 3.Rs.8000 4.Rs.4000 5.None of these

3. Pipe A and B fill the tank and pipe C empty the tank. Pipe A alone fill the tank in 45 hours and efficiency of pipe B is 25% less than pipe A and pipe C can empty the tank in 75 hours. If all the three pipes were opened simultaneously, then after how much time pipe C is closed in order to the tank fill completely in 36 hours? 1.20 hours 2.30 hours 3.40 hours 4.25 hours 5.45 hours

4. Train P is running at a speed of 46kmph crosses a boy who is running at 8kmph in opposite direction in 10 seconds. Train P crosses Train Q that is running at a speed of 28 kmph in same direction in 50 seconds. Find the length of train Q.
1.100m 2.150m 3.200m 4.250m 5.None

5. P and Q sold an article both marked the same price on the article. P sold it after successive discounts of 10% and 6% while Q sold it after successive discounts of 9% and 7%. Find which of the following statements is definitely true. 1.Profit of P is 15.4% 2.Selling price for P and Q is the same 3.P offers a better discount than Q 4.Q offers a better discount than P 5.None of these

6. 6 women and 5 men together can do a piece of work in 20 days, while 12 men and 8 women together can do the same work in 11 (4/11) days. Find which of the following statements is true?
1.Working efficiency of 2 men is 40% more than a woman 2.4 men can do the same task in 50 days
3.5 women can do the same task in 60 days 4.Ratio of efficiency of a woman is 25% more than a man
5.None of these

7. P invested in a business with an initial investment of Rs. (2a + 400) while Q invested Rs. 1200 more than half of the investment of P. Q started the business and after 6.5 months P joined him. At the end of 1 years, 7.5 months profit share of Q is 20% more than that of P. Find the investment made by P in the business. 1.Rs. 4000 2.Rs. 8000 3.Rs. 6000 4.Rs. 12000 5.None of these

8. A man walking from his home at a 5 km/hr speed reaches his friend's house 10 hours late. After that, he returned to his home at a speed of 7km/hr and reached 4 hours earlier. Then find the distance traveled by a man. 1.245 km 2.490 km 3.500 km 4.480 km 5.None of these

9. Ratio of the male to female population of a town in 2020 was 4:3 and the total population in 2020 was 7700. If the male population is ____ and the female population is_____ as compared to last year then the total population of the town becomes 8140 in 2021. 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 above statement true: I). Increased by 25%, Decreased by 20% **II).** Decreased by 70%, Increased by 50% **III).** Increased by 32%, Increased by 10%. 1.Only II 2.Only II and III 3.All I, II and III 4.Only III 5.Only I

10. A box contains 50 balls; out of _____ are blue balls. Two balls are randomly drawn from the box and the probability of the drawn ball, one is red and one is blue ballis _____. 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 above statement true: I). 15,3/7 **II).** 20,24/49 **III).** 35,3/7
1.Only II and III 2.All I, II and III 3.Only II 4.Only I and III 5.Only III

11. A vessel has 960 liters of mixture contains milk and water in the ratio of 13:11. If _____ liters of mixture is taken out and_____ liters of water is added to the remaining mixture then the ratio of milk to water in the vessel becomes equal. 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). 360, 50 **II).** 144, 68 **III).** 216, 72. 1.Only III 2.Only I and II 3.Only II 4.Only II and III 5.Only I

12.The sum of areas of two rectangles (R_1 and R_2) of same breadth is 972 cm^2, and the ratio of length of rectangle R_1 to the length of rectangle R_2 is 4:5. If the area of square having length of side equal to the breadth of rectangles, is 324 cm^2, then find the area of rectangle R_1.
A.564 cm^2 B.326 cm^2 C.432 cm^2 D.624 cm^2 E.None of these

13.Present ages of Seema and Parul are in the ratio of 5:7 respectively. Present age of Raman is 25% more than the age of Parul six years ago. Present age of Raman and Raghav are in the ratio of 9:11 respectively. Find the present age of Raman if the present average age of Seema, Raman, Parul and Raghav is one more than the present age of Parul.
A.27 years B.36 years C.45 years D.54 years E.None of these

14.Manan can complete 60% of the work in 24 days while Niharika can complete 25% of the same work in 12 days and Sanat can complete 50% of the same work in 18 days. Manan and Niharika started the work together and after 17 days Sanat joined them such that they together completed rest of the work. In how many days the work will be completed?
A.25 days B.24 days C.28 days D.12 day E.20 days

15.Train 'A' running with the speed of 90 km/h crosses a pole in 12 seconds while it crosses a man running in the same direction in 15 seconds. If train 'B' running with the speed of 108 km/h crosses the same man running in the opposite direction of train 'B' with the same speed in 14 seconds then find the sum of the length of train 'A' and train 'B'.
A.880 metres B.840 metres C.750 metres D.790 metres E.800 metres

16.Priya invested Rs. 10,000 in the scheme offering 25% p.a. compound interest for 2 years compounded annually. Riya invested Rs. 8,000 in a scheme offering 20% p.a. compound interest for three years compounded annually. Find the difference between the interests earned by Priya and Riya. A.Rs. 174 B.Rs. 199 C.Rs. 224 D.Rs. 249 E.None of these

17.The sum of the total surface area and lateral surface area of a cube is 1440 cm^2. If the volume of the cube is 3200 cm^3 less than that of a cylinder whose radius is 14 cm then the side of the cube is how much percent more/less the height of the cylinder?
A.40% B.45% C.25% D.50% E.35%

18.Bimal and Kamal started a business by investing Rs. (4x + 9000) and Rs. (2x + 4500), respectively. They decided that they will donate 50% of their total profits and the rest will be divided between them in the ratio of their investments. If annual profit received by Bimal is Rs. 10000 more than that by Kamal, then find total annual profit earned by them together.
A.Rs. 40000 B.Rs. 60000 C.Rs. 50000 D.Rs. 80000 E.Can't be determined.

19. 7 years earlier the ratio of the ages of Gayle and Emma was 17:15. After five years, the ratio of their ages will be 23:21. Bravo is 5 years older than ages Emma and Pollard is 7 years older than Gayle. At the time of marriage, the ratio of the ages of Gayle and Emma was 10:9 respectively. What is the sum of the ages of Bravo and Pollard at the time of marriage of Gayle and Emma?
A. 91 years B. 96 years C. 92 years D. 89 years E. None

20. A shopkeeper marked an article __% above the cost price and sold it after two consecutive discounts of 20% and 25%. In this transaction, the shopkeeper had a profit/loss of __%. 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 above statement true: A. 60%, 4% B. 75%, 9% C. 90%, 14%.
A.Only A B.Only B and C C.Only A and C D.Only A and B E.All A, B and C

21. A, B and C working independently can complete a certain piece of work in 20, 30 and 60 days respectively. All the three of them worked together for 5 days and then A left, b and C worked for the next 5 days and then B left. The remaining work was then completed by C. what portion of the work did C complete? a) 11/12 b)5/12 c) 1/12 d) 11/21 e) None of these

22.The average weight of a group of 15 persons is 44 kg. If 5 persons whose average weight is 'x' kg joined the group and 8 persons whose average weight is (x – 6) kg left the group, then the average weight of the 12 persons becomes (x – 1) kg. What is the total weight of these 12 persons? A.544 kg B.590 kg C.572 kg D.564 kg E.None of these

23.The sum of the speed of a boat in still water and current is 20 km/hr. The boat takes 14.5 hours to cover 145 km upstream. If the speed of the boat is increased by _____ % then it takes _____ hours to cover 130 km downstream. 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. 40%, 5 hours II. 80%, 3 hours III. 50%, 4 hours. A.Only I B.Only I and III C.Only I and II D.All I, II and III E.Only III

24.Bimal and Kamal started a business by investing Rs. (4x + 9000) and Rs. (2x + 4500), respectively. They decided that they will donate 50% of their total profits and the rest will be divided between them in the ratio of their investments. If annual profit received by Bimal is Rs. 10000 more than that by Kamal, then find total annual profit earned by them together.
A.Rs. 40000 B.Rs. 60000 C.Rs. 50000 D.Rs. 80000 E.Can't be determined.

25.Ansu started his journey towards his parent's house which is 320 km away at 10:00 am at a speed of 80 km/h but his parents also started moving in a direction away from Ansu at 12:00 pm. As a result, Ansu meet his parents at 5:00 pm. Find the speed at which his parents were travelling.
A.60 km/h B.48 km/h C.58 km/h D.45 km/h E.55 km/h

1. Answer: A
(4x * 8 * 2/100) + (3x * 12 * 2/100) + (5x * (1 + 10/100)^2 – 5x) = 7712
0.64x + 0.72x + 1.05x = 7712
x = 3200
Required total = 12 * 3200 = 38400
2. Answer: C
Ratio of shares in the profit Deepika, Kavitha and Vinolin = (6x *4 + (6x + 8000) * 8):(7x * 8 + (7x + 3000) * 4):(8x * 4 + (8x – 4000) * 8)
= 72x + 64000:84x + 12000:96x – 32000
(84x + 12000)/(96x – 32000) = 12/8
288x – 96000 = 168x + 24000
120x=120000
x = 1000
Initial investment of Vinolin = 8 * 1000 = Rs.8000
3. Answer: B
Pipe B alone fill the tank = 45 * 100/75 = 60 hours
36/45 + 36/60 – x/75 = 1
((36 * 4) + (36 * 3))/180 = 1+ (x/75)
(144 + 108)/180 = 1+ (x/75)
252/180 = 1 + (x/75)
x/75 = (252 – 180)/180
x = 30 hours
4. Answer: A
Length of P = x meters
(46 + 8) * 5/18 = x/10
=> x = 150 meters
Length of Q = y meters
(46 – 28) * 5/18 = (150 + y)/50
=> y = 100 meters
5. Answer: C
Net discount offered by P = -10 - 6 + 10 x 6/100 = 15.40%
Net discount offered by Q = -9 - 7 + 9 x 7/100 = 15.37%
P offers better discount than Q
Hence answer is option C
6. Answer: D
Let the efficiency of a woman and a man respectively = a units/day and b units/day respectively.
Now,
(6a + 5b) x 20 = (8a + 12b) x 125/11
264a + 220b = 200a + 300b
64a = 80b
So, a/b = 5/4
Option a) Working efficiency 2 men = 2 x 4 = 8
Working efficiency of a woman = 5
Required percentage = (8 – 5)/5 x 100 = 60%
This statement is wrong
Option b) Required number of days = 1000/4 x 4 = 62.5 days
This statement is wrong
Option c) Required number of days = (1000/ 5 x 5) = 40 days
This option is wrong
Option d) Ratio of efficiency of woman to man is= 5:4
Hence answer is option D
7. Answer: A
Investment of P = Rs. (2a + 400)
Investment of Q = 1/2 x (2a + 400) + 1200 = (a + 1400)
Ratio of profit share = [(2a + 400) x 13]: [(a + 1400) x 19.5]
(4a + 800)/ (3a + 4200) = 5/6
24a + 4800 = 15a + 21000
So, value of a = 16200/9 = 1800
Investment made by P = 2 x 1800 + 400 = Rs.4000
Hence answer is option A
8. Answer: B
Let the distance between the house be ‘d’ km
Distance = Speed * Time
Actual time = t hours
d = 5* (t+10)
d = 7* (t-4)
Distance is equal
5*(t+10)/60 = 7*(t-4)/60
5*(t+10) = 7*(t-4)
5t+50 = 7t -28
78 = 2t
t= 39
d = 5*(39+10) = 245 km
Total distance travelled = 245+245 = 490 km
9. Answer: E
7700/7 = 1100
Male Population= 1100 * 4 = 4400
Female Population = 1100 * 3 = 3300
For I:
1.25(4400) + 0.8(3300) = 8140
so, I - True
For II:
0.7(4400) + 1.5(3300) = 8030
So, II - False
For III:
1.32(4400) + 1.1(3300) = 9438
So, III -False
Hence, Only I is True
10. Answer: B
For I:
Blue Balls = 15, Red Balls = 35
(15C1*35C1)/50C2 = 3/7
So, I is true
For II:
Blue Balls = 20, Red Balls =30
(20C1*30C1)/50C2 =24/49
So, II is True
For III:
Blue Balls = 35, Red Balls = 15
(35C1*15C1)/50C2 = 3/7
So, III is True
Hence All I,II,III is true.
11. Answer: B
960/(13 + 11) = 40
Milk =520 water=440
For I:
360/24 = 15
Milk taken out= 13*15 = 195
Water taken out= 11* 15 = 165

Milk= 520 – 195 = 325 liters
water= 440 – 165 + 50 = 325 liters
Therefore, I is true.
For II:
144/24 = 6
Milk taken out: 13*6 = 78
Water taken out: 11* 6 = 66
Milk=520 – 78 = 442 liters
water=440 – 66+ 68 = 442 liters
Therefore, II is true.
For III:
216/24 = 9
Milk taken out: 13*9 = 117
Water taken out: 11* 9 = 99
520 – 117 = 403 Liters
440 – 99 + 72 = 413 Liters
Therefore, III is false.
12.Solution
Let the length of rectangle R_1 and rectangle R_2 be '4x' cm and '5x' cm respectively.
Breadth of rectangle = side of square = $\sqrt{324}$ = 18 cm
According to question,
Sum of areas of two rectangles (R_1 and R_2) = 972
4x × 18 + 5x × 18 = 972
18(4x + 5x) = 972
9x = 972/18
9x = 54
x = 54/9 = 6
So, the length of rectangle R_1 = 4 × 6 = 24 cm
Therefore, area of rectangle R_1 = 24 × 18 = 432 cm^2
Hence, option c.
13.Solution
Let, present ages of Seema and Parul are 5x years and 7x years, respectively.
Age of Parul six years ago = 7x – 6 years
Present age of Raman = 1.25(7x – 6) = '8.75x – 7.5' years
Present age of Raghav = 11/9 × (8.75x – 7.5) years
According to question:
5x + 7x + 8.75x – 7.5 + 11/9 × (8.75x – 7.5) = 4 × (7x + 1)
45x + 63x + 78.75x – 67.5 + 96.25x – 82.5 = (28x + 4) × 9
283x – 150 = 252x + 36
31x = 186, x = 6
So, the present age of Raman = 8.75 × 6 – 7.5 = 52.5 – 7.5 = 45 years
Hence, option c.
14.Solution
Given, Manan can complete 60% of the work in 24 days.
So, time taken by Manan to complete the whole work = (24/60) × 100 = 40 days
Given, Niharika can complete 25% of the work in 12 days.
So, time taken by Niharika to complete the whole work = (12/25) × 100 = 48 days
Given, Sanat can complete 50% of the work in 18 days.
So, time taken by Sanat to complete the whole work = (18/50) × 100 = 36 days
Let the total work = 720 (LCM of 40, 48 and 36)
Manan's efficiency = 720/40 = 18 units per day
Niharika's efficiency = 720/48 = 15 units per day
Sanat's efficiency = 720/36 = 20 units per day
Amount of the work done by Manan and Niharika together in 17 days = (18 + 15) × 17 = 33 × 17 = 561 units
Remaining amount of the work = 720 – 561 = 159
Time taken by Manan, Niharika and Sanat to complete the remaining work = {159/(18 + 15 + 20)} = 159/53 = 3 days
So, time taken to complete the whole work = 17 + 3 = 20 days
Hence, option e.
15.Solution
Speed of train 'A' = 90 × (5/18) = 25 m/s
Length of the train 'A' = 25 × 12 = 300 metres
Let the speed of the man = 'x' m/s
According to the question,
(25 – x) = 300/15
25 – x = 20
x = 5
Speed of the man = 5 m/s
Speed of train 'B' = 108 × (5/18) = 30 m/s
Length of the train 'B' = (30 + 5) × 14 = 35 × 14 = 490 m
Sum of the length of train 'A' and train 'B' = 300 + 490 = 790 m
Hence, option d.
16.Solution
Interest earned by Priya = 10000 × $\{(1 + 0.25)^2 – 1\}$ = Rs. 5,625
Interest earned by Riya = 8000 × $\{(1 + 0.20)^3 – 1\}$ = Rs. 5,824
So, the desired difference = 5824 – 5625 = Rs. 199
Hence, option b.
17.Solution
Let each edge of the cube be a cm
According to the question,
$6a^2 + 4a^2 = 1440$
Or, $a^2 = 144$
Or, a = 12 cm (Since the length cannot be negative)
Volume of the cube = $a^3 = 12^3 = 1728$ cm^3
Volume of the cylinder = 1728 + 3200 = 4928 cm^3
Let the height of the cylinder be 'h' cm
According to the question,
$\Pi r^2 h = 4928$
Or, h = (4928 × 7)/(22 × 196) = 8 cm
Required percentage = {(12 – 8)/8} × 100 = 50%
Hence, option d.
18.Solution
Respective ratio of profit share of Bimal and Kamal at the end of the year = [(4x + 9000) × 12]:[(2x + 4500) × 12] = 2:1
Let annual profit share of Bimal and Kamal be Rs. '2a' and Rs. 'a', respectively.
ATQ;
2a – a = 10000
Or, a = 10000
Desired profit = (3 × 10000)/0.50 = Rs. 60000
Hence, option b.
19
18. Gayle and Emma's age 7 years ago = 17x and 15x respectively

$$\frac{17x + 12}{15x + 12} = \frac{23}{21}$$

x = 2
Present age of Gayle = 17 x 2 + 7 = 41 years
Present age of Emma = 15 x 2 + 7 = 37 years
Suppose they got married t years ago = $\frac{41 - t}{37 - t} = \frac{10}{9}$

t = 1

Age of bravo at the time of marriage = 37 + 5 - 1 = 41 years

Age of Pollard at the time of marriage = 41 + 7 - 1 = 47 years

Sum of ages = 41 + 47 = 88 years

20.Solution

Let the cost price of the article be Rs. 'x'.

For option A:

Marked price of the article = Rs. 1.6x

Selling price of the article = 1.6x × 0.80 × 0.75 = Rs. 0.96x

So, the loss percent = (x – 0.96x)/x × 100 = 4%

So, option A can be the answer.

For option B:

Marked price of the article = Rs. 1.75x

Selling price of the article = 1.75x × 0.80 × 0.75 = Rs. 1.05x

So, the profit percent = (1.05x – x)/x × 100 = 5%

So, option B can't be the answer.

For option C:

Marked price of the article = Rs. 1.9x

Selling price of the article = 1.9x × 0.80 × 0.75 = Rs. 1.14x

So, the profit percent = (1.14x – x)/x × 100 = 14%

So, option C can be the answer.

Hence, option c.

21. Ans: B

Portion of work completed in the first 5 days = 5[1/20 + 1/30 + 1/60] = 5[1/10] = ½

Portion of work completed in the next 5 days = 5[1/30 + 1/60] = 5[1/20] = ¼

Portion of work completed by C alone = 1 –[1/2 + ¼] = ¼

Time taken to complete 1/4th of the work = ¼ × 60 = 15 days.

C worked for 5 + 5 + 15 = 25 days

Hence, portion of work completed by him

$= \frac{25}{60} = \frac{5}{12}$

22.Solution

The sum of the weight of 15 persons = 44 × 15 = 660 kg

The sum of the weight of 5 persons = 5 × x = 5x kg

The sum of the weight of 8 persons = 8(x – 6) = (8x – 48) kg

The sum of the weight of 12 persons = 12(x – 1) = (12x – 12) kg

According to the question,

660 + 5x – (8x – 48) = 12x – 12

660 + 5x – 8x + 48 = 12x – 12

660 + 48 + 12 = 12x + 3x

720 = 5x

x = 48

Average weight of 12 persons = 48 – 1 = 47 kg

The sum of the weight of 12 persons = 47 × 12 = 564 kg

Hence, option d.

23.Solution

Let the speed of the boat in still water be 'x' km/hr

Therefore, speed of the current = (20 – x) km/hr

According to the question,

x – 20 + x = 14.5/145

2x – 20 = 10

Or, x = 15 km/hr

For I:

Speed of boat in still water = 1.4x = 21 km/hr

Downstream speed of the boat = 21 + 5 = 26 km/hr

Therefore, time taken to cover 130 km downstream = 130/26 = 5 hours

Therefore, I is true

For II:

Speed of the boat in still water = 1.8x = 27 km/hr

Downstream speed of the boat = 27 + 5 = 32 km/hr

Time taken to cover 130 km downstream = 130/32 = 4.0625 hours

Therefore, II is false.

For III:

Speed of the boat in still water = 1.5 × 5 = 22.5 km/hr

Downstream speed of the boat = 22.5 + 5 = 27.5 hours

Time taken to cover 130 km downstream = 130/27.5 = 4.72 hours

Therefore, III is false.

Hence, option a.

24.Solution

Respective ratio of profit share of Bimal and Kamal at the end of the year = [(4x + 9000) × 12]:[(2x + 4500) × 12] = 2:1

Let annual profit share of Bimal and Kamal be Rs. '2a' and Rs. 'a', respectively.

ATQ;

2a – a = 10000

Or, a = 10000

Desired profit = (3 × 10000)/0.50 = Rs. 60000

Hence, option b.

25.Solution

Distance to Ansu's parent's house = 320 km

Let the speed at which Ansu's parents are travelling = 'x' km/h

So, relative speed of Anshu w.r.t. his parents = (80 – x) km/h

In the first 2 hours (10:00 am to 12:00 pm), distance travelled by Anshu = (80 × 2) = 160 km

Distance still to be covered = (320 – 160) = 160 km

According to the question,

160/(80 – x) = 5

Or, 400 – 5x = 160

Or, 5x = 240

Or, x = 48

Required speed = 48 km/h

Hence, option b.