

Statement Test 5

1. The ratio of the cost price of article A to B is 3:2. The marked price of both articles is Rs. 2000 each. Both articles are sold at 25% profit each. If the discount given on article A is half of that on article B, then find the difference between the selling price of both articles.

1.Rs. 400 2.Rs. 500 3.Rs. 300 4.Rs. 200 5.Rs. 600

2. A vessel contains a mixture of milk and water in the ratio of 2:1. If 20% is taken out from the vessel and replaced with the same quantity of water, then the quantity of milk in the final mixture will be 10 ml more than that of water. Find the initial mixture.

1.120 ml 2.210 ml 3.180 ml 4.150 ml 5.240 ml

3. The time taken by P, Q and R to complete a work is (X) days, (X - 4) days and 10 days respectively. If the total work is 120 units, while Q and R together can complete 90% of the total work in 4 days, then find the time taken by P to complete the work alone.

1.12 days 2.10 days 3.15 days 4.20 days 5.Cannot be determined

4. The downstream and upstream speed of the boat is (X) km/hr and 24 km/hr respectively. The time taken by the boat to cover 128 km downstream and (128 - X) km upstream distance is the same. Find the speed of the river. (X < 50)

1.2 km/hr 2.3 km/hr 3.5 km/hr 4.4 km/hr 5.6 km/hr

5. A three-digit number ABC, when divided by C, then the digit sum of the resultant value will not be exactly divisible by 3. A, B and C are consecutive integers. Find the product of the digits of ABC. (6 > A > B > C > 0)

1.30 2.60 3.40 4.50 5.more than one

6. The lengths of train A and B are (X) meters and (Y) meters respectively and the speeds of trains A and B are 30 m/sec and 20 m/sec respectively. The time taken by both trains to cross each other when running in the opposite direction is 10 seconds. Also, both trains can cross their own length at the same time. Find the value of (X - Y).

1.100 2.120 3.160 4.180 5.150

7. In a vessel A, quantity of spirit was 12 liters more than that of water. After adding 'y' liter of mixture having water and spirit in the ratio of 3: 5 in the vessel A, ratio of water and spirit in the final mixture becomes 9:13. Which of the option is correct regarding quantity of mixture in vessel A and value of 'y'?

1. 96 liters, 80 liters 2. 84 liters, 72 liters 3. 114 liters, 128 liters 4. Both (a) and (b) 5. Both (a) and (c)

8. Vessel A contains 80 liters of pure milk and B contains 66 liters water. From vessel A, 42 liter of milk is taken out and poured into vessel B and then 72 liters of mixture from vessel B is taken out and poured into vessel A. Find the ratio of difference of final quantity of milk in both the vessel to final quantity of water in vessel B.

1. 13:11 2. 11:26 3. 11:13 4. 12:11 5. 26:11

9. Present age of B is x years and age of A is twice the age of B. C is 6 years elder to A. Ratio of present age of C to D is 13:16 and six years hence, average age of B and C is Y years. If the age of A, B, C & D are an integer and age of each person less than 70 years, then find the possible value of Y.

1. 24 years 2. 43.5 years 3. 20 years 4. All of these 5. Both (a) and (b)

10. Income of A and B is 5000 and 7000 respectively and ratio of their expenditure is 7:6. saving of C is 5000 which is 25% more than that of B. find the expenditure of A.

(A) 4200 (B) 3500 (C) 2100 (D) 1400 (E) None of these

11. The marked price of a mobile is 13000, if shopkeeper give two successive discount of 15% and X% respectively. Then the selling price of mobile will be 9555. find the value of x .

(A) 16% (B) 14% (C) 10% (D) 28% (E) None of these

12. Average age of A, B, and C is 2p and average of BC is 2p +2. if b is 4 year older than A and D is 2 year older than C. then age of D will be_____.

(A) 2p+6 (B) 3p-4 (C) p+6 (D) 4p+3 (E) None of these

13. A, B and C invested their capital in the ratio of 7:5:9. the ratio of months for which A, B and C invested is 2:3:4. if C get (p+1200) more than B. then profit share of A is 2800. find the value of 2/3 of x ?

(A) 4800 (B) 2000 (C) 6400 (D) 5800 (E) None of these

14. The average number of Apple in 10 basket in a room is 15 if one basket is taken out from it and two more basket are added in which the number of Apples are 27 and 22 respectively then the average number increased by 'M'. Which of the following is true for M. 1. M is more than 10. 2. M is divisible by 3.

(A) Only (i) (B) Only (ii) (C) Both (i) and (ii) (D) Either (i) and (ii) (E) None of these

15. A laptop having cost price of Rs 17000 was marked 15% above its cost price and sold after offering a discount of x% such that the average of selling price of the laptop and a microwave was Rs 20922. If the microwave was sold at a profit of x% and the cost price of microwave is Rs 22000, then find the value of "2x + 6".

(A) 30 (B) 52 (C) 43 (D) 28 (E) None of these

16. A car covered 40% distance at 20km/hr, 33.33% of the remaining distance at 18 km/hr and the remaining distance at 36 km/hr such that it took total 19 hours for the entire journey. A bike must travel at what speed to cover the entire distance which was covered by the car in 15 hours.

(A) 27 km/hr (B) 30 km/hr (C) 45 km/hr (D) 36 km/hr (E) None of these

17. Nupur lent out Rs 60000 at X% per annum simple interest for 2 years. What is the value of X? Statement 1:-He earned Rs 15000 as interest.

Statement 2:- Had he lent out at 'X' % per annum compound interest (compounded annually), he would have earned Rs P more. (A) Only I is sufficient (B) Only II is sufficient (C) Both I and II together are necessary (D) Either of them is sufficient (E) None of these

18. A man alone can finish a work in 27 days while a woman is 25% more efficient than a man. If a man and a woman together can complete the same work in X days then which of the following is true for X

1. The sum of digits of X is even number. 2. X is multiple of 4.

(A) Only (i) (B) Only (ii) (C) Both (i) and (ii) (D) Either (i) and (ii) (E) None of these

19. 36 kg of mixture P (rice + wheat) contains 4 kg more rice than wheat in it. 125 kg of mixture Q contains 28% wheat and remaining rice. If both mixtures are mixed and 12 KG of wheat is added then what will be the quantity of wheat in the resultant mixture.

(A) 85 (B) 63 (C) 48 (D) 74 (E) None of these

20. Tina invested Rs 3000X in a scheme P at 4x% per annum simple interest for 8 years if she got total amount 34560 then find the value of x.

(A) 6 (B) 9 (C) 5 (D) 8 (E) None of these

21. Priya started a business with investment Rs 9000 after 'X' months Shipra joins the business with investment Rs 12000. If at the end of the 18 months the profit share of Shipra is Rs 7200 out of total profit Rs 18000. Find the value of x

(A) 10 (B) 11 (C) 13 (D) 12 (E) None of these

22. Pipe P alone can fill a tank in 48 minutes, Pipe P and Q together can fill it in 20 minutes and Pipe Q and R together can fill it in 1.25 hours. Find the time taken by pipe P and R together to fill the same tank.

(A) 4 hrs 15 min (B) 3 hrs 20 min (C) 5 hrs (D) 7 hrs 10 min (E) None of these

23. 40 litres of water is added to a mixture of milk and water such that quantity of water becomes 5/9th of the total quantity of mixture while when 20 litres of milk is added to the mixture, then the quantity of milk becomes 62.5% of the total mixture. Find the initial quantity of the mixture.

A.160 litres B.180 litres C.140 litres D.200 litres E.150 litres

24. Rohit invested Rs. x and Rs. (x + 800) in schemes 'A' and 'B', respectively. Scheme 'A' offering compound interest of 30% p.a. compounded annually and scheme 'B' offering simple interest of 25% p.a. If at the end of 2nd year, difference of the interest received from both schemes was Rs. 18, then find the value of 'x' such that 'x' is an integral value. A.2100 B.2200 C.2300 D.2400 E.None of these

25. Anmol and Deepak entered into a business investing their capitals in the respective ratio of 3:4. After 6 months, Anmol invested Rs. 100 more while Deepak invested Rs. 1400 more. At the end of year profit share of Anmol was 2000 out of total profit of Rs. 5000. Find the initial investment made by Deepak.

A. Rs. 4500 B.Rs. 6000 C.Rs. 4800 D.Rs. 5000 E.None of these

1. Answer: B

Let the cost price of articles A and B be Rs. 300X and Rs. 200X respectively.

Article A

The C.P. = Rs. 300X

The M.P. = Rs. 2000

The S.P. = 125% of 300X = Rs. 375X

The discount = (2000 - 375X)

Article B

The C.P. = Rs. 200X

The M.P. = Rs. 2000

The S.P. = 125% of 200X = Rs. 250X

The discount = (2000 - 250X)

Now,

$$(2000 - 375X)/(2000 - 250X) = 1/2$$

$$4000 - 750X = 2000 - 250X$$

$$500X = 2000$$

$$X = 4$$

The required difference = (375X - 250X) = 125X = (125 * 4) = Rs. 500.

Hence, the correct answer is option B.

2. Answer: D

Let the initial milk and water in the vessel be 200X ml and 100X ml respectively.

Final mixture

The quantity of milk = 80% of 200X = 160X ml

The quantity of water = (80% of 100X) + (20% of 200X + 100X) = 80X + (20% of 300X) = (80X + 60X) = 140X

Now,

$$160X - 140X = 10 \text{ ml}$$

$$20X = 10$$

$$X = 0.50$$

The initial mixture = 300X = (300 * 0.50) = 150 ml.

Hence, the correct answer is option D.

3. Answer: A

The total work = 120 units

The efficiency of R = 120/10 = 12 units/day

The work done by Q and R together = 90% of 120 = 108 units

The work done by R = (4 * 12) = 48 units

The work done by Q = (108 - 48) = 60 units

The efficiency of Q = 60/4 = 15 units/day

The time taken by Q to complete the work alone = 120/15 = 8 days

Given that,

$$X - 4 = 8$$

$$X = 12$$

The time taken by P to complete the work alone = X = 12 days.

Hence, the correct answer is option A.

4. Answer: D

Distance/Speed = Time

Given that,

$$128 / X = (128 - X) / 24$$

$$128 / X = (128 - X) / 24$$

$$128X - X^2 = 3072$$

$$X^2 - 128X + 3072 = 0$$

$$X^2 - 96X - 32X + 3072 = 0$$

$$X(X - 96) - 32(X - 96) = 0$$

$$(X - 32)(X - 96) = 0$$

$$X = +32 \text{ or } +96$$

$$X = 32 \text{ (given } X < 96)$$

So, the downstream speed = X = 32 km/hr

The speed of the river = (32 - 24)/2 = 8/2 = 4 km/hr.

Hence, the correct answer is option D.

5. Answer: B**Case I**

$$A = 5$$

$$B = 4$$

$$C = 3$$

$$543/3 = 181$$

$$(1 + 8 + 1) = 10 \text{ (not divisible by 3)}$$

Case II

$$A = 4$$

$$B = 3$$

$$C = 2$$

$$432/2 = 216$$

$$(2 + 1 + 6) = 9 \text{ (divisible by 3)}$$

Case III

$$A = 3$$

$$B = 2$$

$$C = 1$$

$$321/1 = 321$$

$$(3 + 2 + 1) = 6 \text{ (divisible by 3)}$$

Only case I follow.

So, ABC = 543

Required product = (5 * 4 * 3) = 60.

Hence, the correct answer is option B.

6. Answer: A

When both trains are crossing each other,

$$(X + Y)/(30 + 20) = 10$$

$$X + Y = 10 * 50$$

$$X + Y = 500$$

Total length of both trains = 500 m

Also, given that,

Time = Distance/Speed

$$X/30 = Y/20$$

$$30Y = 20X$$

$$X:Y = 3:2$$

$$X = 3/5 \text{ of } 500 = 300$$

$$Y = 2/5 \text{ of } 500 = 200$$

Required value = (X - Y) = (300 - 200) = 100.

Hence, the correct answer is option A.

7.Explanation:

Let quantity of water in vessel A be x liters

Then quantity of spirit in the vessel A = (x+12) lit

$$\text{Quantity of water added} = y \times \frac{3}{8} = \frac{3y}{8}$$

$$\text{And quantity of spirit added} = y \times \frac{5}{8} = \frac{5y}{8}$$

ATQ,

$$\frac{x + \frac{3y}{8}}{x + 12 + \frac{5y}{8}} = \frac{9}{13}$$

$$\frac{8x + 3y}{8x + 96 + 5y} = \frac{9}{13}$$

$$104x + 39y = 72x + 864 + 45y$$

$$32x - 6y = 864$$

$$16x - 3y = 432 \dots(i)$$

From option (a),

Total quantity of mixture in vessel A = 96 liter

So,

$$x + x + 12 = 96$$

$$x = 42$$

Put the value of x and y in (i)

$$16x - 3y = 432$$

$$16 \times 42 - 3 \times 80 = 432$$

Option (a) satisfy the equation.

From option (b),
 Total quantity of mixture in vessel A = 84 liter
 So,
 $x + x + 12 = 84$
 $x = 36$
 Put the value of x and y in (i)
 $16x - 3y = 432$
 $16 \times 36 - 3 \times 72 = 360$
 Option (b) does not satisfy the equation.

From option (c)

Total quantity of mixture in vessel A = 114 liter
 So,
 $x + x + 12 = 114$
 $x = 51$
 Put the value of x and y in (i)
 $16x - 3y = 432$
 $16 \times 51 - 3 \times 128 = 432$
 Option (c) satisfy the equation.

8. Explanation:

Milk in vessel A = 80 liter
 Water in vessel B = 66 liter
 Now 42 liters of milk taken out and pour into B
 Remaining milk in A = 80 - 42 = 38 liter
 Ratio of milk to water in vessel B = 42:66 = 7:11
 Quantity of milk taken out from B
 $= \frac{7}{18} \times 72 = 28$ liter
 Quantity of water taken out from B
 $= \frac{11}{18} \times 72 = 44$ liter
 Final quantity of milk in B = 42 - 28 = 14
 Final quantity of water in B = 66 - 44 = 22 liter
 Final quantity of milk in A = 38 + 28 = 66 liter
 Required ratio = (66 - 14):22 = 52:22 = 26:11

9. Explanation:

Let the present age of A = 2x years
 Present age of B = x
 Present age of C = 2x + 6 ... (i)
 Present age of D = $\frac{16}{13}(2x + 6)$... (ii)
 ATQ,
 $\frac{x+2x+6+6+6}{2} = Y$
 $\frac{3x+18}{2} = Y$
 Age of each person is an integer and less than 70 years.
 So, age of C should be the multiple of 13 and is even number to get the value of x integer
 Present age of C = 2x + 6 = 26 (26 is the multiple of 13)
 10 = x put in (ii)
 Present age of D = $\frac{16}{13}(2x + 6) = \frac{16}{13}(20 + 6) = 32$ years (i.e. less than 70 years)
 Value of Y = $\frac{3x+18}{2} = 24$
 Present age of C = 2x + 6 = 52 (52 is the multiple of 26)
 23 = x
 Present age of D = $\frac{16}{13}(2x + 6) = \frac{16}{13} \times (52) = 64$ years (i.e. less than 70 years)
 Value of Y = $\frac{3x+18}{2} = 43.5$

10. B

Let expenditure of A and B be 7x and 6x
 Savings of B = 5000/1.25 = Rs 4000

As per question;
 $7000 - 6x = 4000$
 $\Rightarrow 6x = 3000$
 $\Rightarrow x = 500$
 Expenditure of A = 7x = Rs 3500
11. B
 SP = Rs 9555
 $\Rightarrow 0.85 \times (1 - x/100) \times 13000 = 9555$
 $\Rightarrow (1 - x/100) = 0.86$
 $\Rightarrow x/100 = 0.14$
 $\Rightarrow x = 14\%$

12. A

Sum of A+B+C = 2p × 3 = 6p
 Sum of B+C = 2(2p+2) = 4p+4
 $\Rightarrow A = 6p - 4p - 4 = 2p - 4$
 $\Rightarrow B = 2p - 4 + p = 2p$ and $C = 4p - 4 - 2p = 2p - 4$
 Hence; D = 2p + 4 + 2 = 2p + 6 years

13. B

Let investment of A, B and C be 7k, 5k and 9k
 Profit ratio of A:B:C
 $= 7k(2):5k(3):9k(4) = 14:15:36$
 As per question;
 $14 / (14+15+36) \times \text{Total profit} = 2800$
 $\Rightarrow \text{Total Profit} = \text{Rs } 13000$
 Profit of ;
 B = $15/65 \times 13000 = \text{Rs } 3000$
 C = $\text{Rs } 13000 - 2800 - 3000 = \text{Rs } 7200$
 So; $p + 1200 = 7200 - 3000$
 $\Rightarrow P = 3000$
 Therefore; $2p/3 = 2000$

14. D

Total apples in 10 basket = 15 × 10 = 150
 Now; when basket is removed and 2 basket is added;
 New average = $(150 - 15 + 27 + 25) / (10 - 1 + 2) = 187/11 = 17$
 $\Rightarrow M = 17$
 Hence, only 1

15. A

MP of laptop = 1.15 × 17000 = Rs 19550
 Sum of SP of laptop and microwave
 = $\text{Rs } 20922 \times 2 = \text{Rs } 41844$
 $\Rightarrow 19550(1 - x/100) + 22000(1 + x/100) = 41844$
 $\Rightarrow -195.5x + 220x = 294$
 $\Rightarrow x = 12$
 So $2x + 6 = 24 + 6 = 30$

16. B

Let total distance covered be 10d km
 As per question ;
 $4d/20 + [(2d)/18] + 4d/36 = 19$
 $\Rightarrow d/5 + d/9 + d/9 = 19$
 $\Rightarrow (9d + 10d)/45 = 19$
 $\Rightarrow d = 45$

Total distance = 10d = 450 km
 Required speed = 450/15 = 30 kmph

17. A

From statement 1;
 $15000 = 60000 \times x \times 2/100$
 $\Rightarrow x = 12.5\%$

Hence, only 1 is sufficient

18. B

Let efficiency of men be $4k$
So, women = $1.25 \times 4k = 5k$
Total work to be done = $27 \times 4k = 108k$
Time taken by both together = $108k/(4k+5k) = 12k$
Hence, only 2

19. B

For P;
Rice + Wheat = 36 kg
 \Rightarrow Rice + Rice - 4 = 36
 \Rightarrow Rice = 20kg and Wheat = 16 kg
Rice in Q = $0.72 \times 125 \text{ kg} = 90 \text{ kg}$
Wheat in Q = $125 - 90 \text{ kg} = 35 \text{ kg}$
Now;
Wheat in the resultant mixture =
 $35 + 16 + 12 = 63 \text{ kg}$

20. A

Amount received = Rs 34560
 $\Rightarrow 3000x \times 4x \times 8 / 100 = 34560$
 $\Rightarrow x^2 = 36$
 $\Rightarrow x = 6$

21. D

Total investment of ;
Priya = Rs 9000×18
Shipra = Rs $12000 \times (18 - x)$
Ratio of profit of Priya : Shipra =
 $9000 \times 18 : 12000(18 - x) = 54 : 4(18 - x)$
 $\Rightarrow (18000 - 7200) : 7200 = 54 : 72 - 4x$
 $\Rightarrow 3 : 2 = 24 : 72 - 4x$
 $\Rightarrow 216 - 12x = 48$
 $\Rightarrow 12x = 168$
 $\Rightarrow x = 12$

22. B

LCM (48, 20) = 240
Let total quantity of tank be 240 l
Quantity of tank filled in a min by;
P = $240/48 = 5 \text{ l}$
P + Q = $240/20 = 12 \text{ l}$
 $\Rightarrow 5 + Q = 12$
 $\Rightarrow Q = 7 \text{ l}$
R + Q = $240/(1.25 \times 60) = 3.2 \text{ l}$
 $\Rightarrow R = 3.2 - 7 = -3.8 \text{ l}$ (outlet pipe)
So; time taken by P and R together
= $240/(5 - 3.8) = 200 \text{ min} = 3 \text{ hrs } 20 \text{ min}$

23. Solution

Let the initial quantity of milk and water in the mixture be 'x' litres and 'y' litres, respectively
According to the question,
 $(y + 40) = (5/9) \times (x + y + 40)$
Or, $5x - 4y = 160$
Also, $(x + 20) = 0.625(x + y + 20)$
Or, $(y - 0.6x) = 12 \dots (2)$
On solving equation (1) and (2), we get
Initial quantity of milk = $x = 80$
Initial quantity of water = $y = 60$
Initial quantity of the mixture = $(x + y) = 140 \text{ litres}$
Hence, option c.

24. Solution

According to the question,
Case I:
 $[x \times 1.3 \times 1.3 - x] - [(x + 800) \times 0.25 \times 2] = 18$
Or, $0.69x - 0.5x - 400 = 18$

Or, $x = 2200$

Case II:

$[(x + 800) \times 0.25 \times 2] - [x \times 1.3 \times 1.3 - x] = 18$
Or, $0.5x + 400 - 0.69x = 18$
Or, $382 = 0.19x$
Or, $x = 2010.52$ (not possible)
Hence, option b.

25. Solution

Let initial investment made by Anmol and Deepak be Rs. $3x$ and Rs. $4x$, respectively.
Ratio of profit share of Anmol to profit share of Deepak = $[3x \times 6 + (3x + 100) \times 6] : [4x \times 6 + (4x + 1400) \times 6]$
 $= (6x + 100) : (8x + 1400)$
According to question,
 $(6x + 100)/(14x + 1500) = 2000/5000$
 $(6x + 100)/(14x + 1500) = 2/5$
 $30x + 500 = 28x + 3000$
 $2x = 2500$
 $x = 1250$
Initial investment made by Deepak = $4 \times 1250 = \text{Rs. } 5000$
Hence, option d.