

### Statement Test 7

1. A boat can cover 117 km in downstream in 4.5 hours. If the speed of the boat in still water is increased by 25%, then it will travel 75 km in upstream in 7.5 hours. Find the speed of the current.  
A 5 km/hr B 15 km/hr C 12 km/hr D 10 km/hr E 8 km/hr
2. The circumference of a circle is 176 cm. Length of a rectangle is 6 cm less than the diameter of the circle and breadth of the rectangle is 4 cm less than the radius of the circle. Find 75% of the area of the rectangle.  
A  $900 \text{ cm}^2$  B  $845 \text{ cm}^2$  C  $720 \text{ cm}^2$  D  $825 \text{ cm}^2$  E None of these
3. Amar scored 192 marks in a test and failed by 112 marks. The maximum marks for the test is 608 more than the marks obtained by Amar in the test. Find the passing percentage in the test.  
A 38% B 36% C 42% D 34% E None of these
4. 400 ml of a mixture of liquid A and liquid B contains 45% liquid A. How much liquid B should be added in the mixture so that liquid A in the mixture becomes 37.5%.  
A 80 ml B 120 ml C 75 ml D 100 ml E None of these
5. A train running at the speed of 144 km/h crosses a pole and a platform in 7.5 seconds and 13.5 seconds respectively. Find the time in which the train will cross a tunnel which is 20% longer than the length of the platform.  
A 14.5 seconds B 14.7 seconds C 15.4 seconds D 16.5 seconds E None
6. Monthly income of Ayushi is Rs. 30400 and his monthly savings is Rs. 18000. If next month his income increased by 20% and expenditure is increased by 25% then find the increase in his savings (in Rs.).  
A Rs. 3820 B Rs. 2640 C Rs. 3100 D Rs. 2980 E None of these
7. When Rs. X is invested at 20% p.a. for  $T_1$  years, and at 25% p.a. for  $T_2$  years, both at simple interest gives an interest of Rs. 3200 and Rs. 8000, respectively. Find  $T_1:T_2$ .  
A 2:3 B 4:5 C 5:6 D 3:4 E 1:2
8. Rahul scored runs with an average of 40 runs in first  $(x + 10)$  matches and scored runs with an average of 50 in next 10 matches due to which his overall average become  $(2x + 2.5)$ . Find the value of x.  
(a) 15 (b) 20 (c) 22 (d) 30 (e) None
9. A shopkeeper makes a loss of 25% on selling a box full of sweets at Rs 60.75. At what price should he sell the same box full of sweets to make a profit of 35% ?  
a.109.35 b.98.35 c.105.35 d.99.35 e.None of these
10. 7 boys are arranged according to their age and their average age is 45 and average age of 4 youngest boys is 40 while age of 4 oldest boys is 50 , then what is the age of fourth oldest boy ?  
a.65 b.49 c.40 d.45 e.50
11. The difference between the squares of two numbers is 208 while the difference between the same two numbers is 4. If the ratio of the two numbers is 7:6, respectively, then find the product of the two numbers.  
A 616 B 624 C 560 D 896 E 672
12. The average of present age of Arun, Manashi and Vinit is 32 years and ratio of age of Arun and Vinit after 3 years will be 6 : 7 respectively. If Manashi is 15 years younger than Vinit, then what is the present age of Vinit?  
(A) 42 years (B) 39 years (C) 28 years (D) 18 years (E) None of these
13. The ratio of income of A and B is 5 : 6 while the ratio of expenditure of A and B is 4 : 7. If saving of A and B is respectively Rs. 7000 and Rs. 4000, then find the income of A.

- (A) Rs. 13000 (B) Rs. 15000 (C) Rs. 14000 (D) Rs. 12000 (E) None of these
14. The ratio of Red and Blue balls in a box is 8 : 13. After adding 10 Red balls and 20 Blue balls, the ratio of balls becomes 7 : 12 respectively. Find the number of Blue balls in the box initially.  
(A) 54 (B) 58 (C) 52 (D) 56 (E) None of these
15. If 2 numbers are select randomly among first 35 natural numbers, then what will be the probability of getting both numbers are multiple of 6?  
(A)  $2/119$  (B)  $3/127$  (C)  $5/113$  (D)  $7/111$  (E) None of these
16. By selling an article for Rs. 69, there is a loss of 8%, when the article is sold for Rs. 78 the gain or loss per cent is :  
(a) neither loss nor gain (b) 4% gain (c) 4% loss (d) 40% gain (e) None
17. Two trains A and B have speed 54 km/hr and 72 km/hr respectively. Both trains started running at 1:30 pm from point P and Q respectively towards each other and meet at 6:10 pm. Find the distance between point P and point Q.  
1.588 km 2.648 km 3.548 km 4.568 km 5.None of these
18. In a company the number of males present and number of females present is 9 : 5. If the total employees are 7560 and 40% employees are on leave, Then find the difference between present males and absent females.  
(A) 1296 (B) 1580 (C) 1512 (D) 1236 (E) None
19. A deck contains 52 cards and 2 cards are drawn randomly without replacement. What is the probability that first one is a face card and other is a number multiple of 2?  
(A)  $15/221$  (B)  $10/221$  (C)  $40/221$  (D)  $20/221$  (E) None
20. The present ages of A,B and C are in proportions 4:7:9. Eight years ago, the sum of their ages was 56. What are their present ages (in years)?  
a) 16, 28, 36 b) 12, 21, 27 c) 20, 35, 45 d) 8, 14, 18 e) None
21. Ratio of the ages of abha and sapna 4 years before was 3:7 and the ratio of their ages 6 years later will be 5:9. Find the sum of the ages of sapna today and that of abha 8 years before?  
(A) 40 (B) 35 (C) 25 (D) 50 (E) None
22. Perimeter of a square is 36cm and the length of the rectangle is 11.11% more than the side of the square. If the breadth of the rectangle is 2cm more than the length of the rectangle, then find the area of the rectangle?  
(A) 180 (B) 150 (C) 120 (D) 210 (E) None
23. The ratio of water and alcohol in the mixture is 5:3. If 32 litres of the mixture is taken and replaced with 26 litres of alcohol, then the ratio of water and alcohol becomes 5:4. Find the initial quantity of the mixture?  
(A) 208 litres (B) 230 litres (C) 225 litres (D) 224 litres (E) None
24. The price of a commodity rises from Rs 10 per kg to Rs 12.50 per kg. If the expenditure can't be increase, then the percentage of reduction in consumption is?  
a.10% b.15% c.20% d.25% e.None of these
25. A and B alone can complete a work in 40 days and 35 days respectively. In how many days the work is completed if A and B worked on alternate days starting from A?  
A.  $75/2$  days B.  $112/3$  days C.  $361/7$  days D.  $299/8$  days E. None of these
26. A shopkeeper marked his goods 60% above its cost price and earned a profit of Rs. 160, when he sold it at giving 25% discount. Find the marked price of the article.  
A. Rs. 800 B. Rs. 1200 C. Rs. 1240 D. Rs. 1280 E. None of these
27. Average age of a family with 6 members is 34 years and the age of youngest family member is 14 years. Calculate the average age of the family just before the youngest member is born.  
A. 18 years B.12 years C.20years D.24 years E.26years

**1. Solution**

Let, the speed of the boat in still water and the speed of the stream be 'x' km/hr and 'y' km/hr, respectively.

ATQ,

$$(x + y) = (117/4.5) = 26 \dots\dots (I)$$

$$\text{Also, } (1.25x - y) = (75/7.5) = 10 \dots\dots (II)$$

By adding equations (I) and (II), we get

$$2.25x = 36$$

$$\text{Or, } x = 16$$

Putting value of 'x' in equation (I), we get

$$y = 26 - 16 = 10$$

Therefore, speed of the stream = y = 10 km/hr

Hence, option d.

**2. Solution**

Let radius of the circle be 'r' cm

ATQ,

$$2 \times \pi \times r = 176$$

$$\text{Or, } r = 28$$

So, radius of the circle = 28 cm

Length of the rectangle =  $\{(2 \times 28) - 6\} = 50$  cm

And, breadth of the rectangle =  $(28 - 4) = 24$  cm

Therefore, required area =  $0.75 \times 50 \times 24 = 900$  cm<sup>2</sup>

Hence, option a.

**3. Solution**

Passing marks for the test =  $192 + 112 = 304$

Maximum marks for the test =  $192 + 608 = 800$

Desired percentage =  $304/800 \times 100 = 38\%$

Hence, option a.

**4. Solution**

Quantity of liquid A in the mixture initially =  $0.45 \times 400 = 180$  ml

Quantity of liquid B in the mixture initially =  $400 - 180 = 220$  ml

Let 'x' ml of liquid B is added in the mixture

$$\text{So, } 180/(400 + x) = 0.375$$

$$180 = 150 + 0.375x$$

$$0.375x = 30$$

$$x = 80 \text{ ml}$$

**5. Solution**

Speed of the train =  $144 \times 5/18 = 40$  m/s

Let the length of the train be 'L' cm

According to question,

$$L = 40 \times 7.5 = 300 \text{ metres}$$

Let length of platform be 'P' metres

$$\text{So, } L + P = 40 \times 13.5 = 540 \text{ metres}$$

$$P = 540 - 300 = 240 \text{ metres}$$

Length of tunnel =  $1.2 \times 240 = 288$  metres

Desired time =  $(288 + 300)/40 = 14.7$  seconds

Hence, option b.

**6. Solution**

Monthly expenditure of Ayushi =  $30400 - 18000 = \text{Rs. } 12400$

Monthly income of Ayushi in next month =  $1.2 \times 30400 = \text{Rs. } 36480$

Monthly expenditure of Ayushi in next month =  $1.25 \times 12400 = \text{Rs. } 15500$

Monthly savings of Ayushi in next month =  $36480 - 15500 = \text{Rs. } 20980$

Increase in savings of Ayushi =  $20980 - 18000 = \text{Rs. } 2980$

Hence, option d.

**7. Solution**

$$(X \times 20 \times T_1)/100 : (X \times 25 \times T_2)/100 = 3200 : 8000$$

$$\text{Or, } T_1 : T_2 = 1 : 2$$

Hence, option e.

**8)b**

$$40*(x+10) + 50 * 10 = (2x + 2.5)*(x+20)$$

$$40x + 900 = 2x^2 + 40x + 2.5x + 50$$

$$4x^2 + 5x + 100 = 1800$$

$$4x^2 + 5x - 1700 = 0$$

$$x = 20 \text{ or } x = -85/4$$

$x = -85/4$  is not possible

$$x = 20$$

**9. (a)**

1. Box price =  $100x$

75% price =  $60.75$

$$100x = \frac{60.75 \times 100}{75 \times 100}$$

$$100x = 81$$

$$35\% \text{ profit} = \frac{81 \times 135}{100}$$

**10. (d)**

3. Let the age of fourth oldest boy = d

$$7 \times 45 = (4 \times 40) + (4 \times 50) - d$$

$$315 = 160 + 200 - d$$

$$d = 360 - 315$$

**11. Solution**

Let the two numbers be 'a' and 'b' such that  $a > b$

Then, we have  $(a^2 - b^2) = 208$

And,  $(a - b) = 4$

Since,  $(a^2 - b^2) = (a + b) \times (a - b)$

So,  $(a + b) = 208 \div 4 = 52$

So, 'a' =  $52 \times (7/13) = 28$

And, 'b' =  $52 - 28 = 24$

Therefore, product of the two numbers =  $28 \times 24 = 672$

Hence, option e.

**12. Ans. (B)**

At present,

Age of Arun =  $(6x - 3)$  years  
 Age of Vinit =  $(7x - 3)$  years  
 Age of Manashi =  $(7x - 3 - 15)$   
 =  $(7x - 18)$  years  
 $(6x - 3) + (7x - 3) + (7x - 18) = 32 \times 3$   
 $20x - 24 = 96$   
 $20x = 120$   
 $x = 6$

Present Age of Vinit =  $7 \times 6 - 3$   
 =  $42 - 3 = 39$  years

**13. Ans. (B)**

Income of A =  $5x$  Rs.,  
 Income of B =  $6x$  Rs.  
 $(5x - 7000)/(6x - 4000) = 4/7$   
 $35x - 49000 = 24x - 16000$   
 $11x = 33000$   
 $x = 3000$

Income of A =  $5 \times 3000 =$  Rs. 15000

**14. Ans. (C)**

Initially, Red Balls =  $8x$   
 Blue Balls =  $13x$   
 $(8x + 10)/(13x + 20) = 7/12$   
 $12 \times (8x + 10) = 7 \times (13x + 20)$   
 $96x + 120 = 91x + 140$   
 $5x = 20$   
 $x = 4$

Blue balls initially =  $13 \times 4 = 52$

**15. Ans. (A)**

In first 35 natural number,  
 Number multiple of 6 =  $35/6 = 5$  (integer value)  
 Probability =  $5C2/35C2 = 10/595 = 2/119$

**16. B**

Sol 24. (b) According to question,  
 Let CP of the article is = 100

100 (CP)  
 ↓  
 8% loss  
 92 (SP) → Rs. 69

92 units → Rs. 69  
 1 unit → Rs.  $\frac{69}{92}$   
 100 units →  $\frac{3}{4} \times 100 =$  Rs. 75  
 CP of article is Rs. 75  
 If SP of article is Rs. 78  
 Profit % =  $\frac{3}{75} \times 100 = 4\%$

**17. a**

**Answer: 1**

**Solution:**

**Given:** Speed of train A = 54 km/hr

Speed of train B = 72 km/hr

They start running at = 1:30 p.m

They meet each other at = 6:10 p.m

**Formula used:** Speed = Distance/Time

**Concept:** Distance between point P to point Q = Distance travelled by train A + Distance travelled by train B

**Calculation:** Total time taken by them to meet each other = 6:10 - 1:30

∴ 4 hours 40 minutes

⇒ After converting it into hours it becomes  $14/3$  hours

⇒ Distanced covered by train A =  $54 \times (14/3)$

∴ 252 km

⇒ Distanced covered by train B =  $72 \times (14/3)$

∴ 336 km

Total distance between point P to Q = 252 + 336

∴ 588 km

**18. Ans. (C)**

Present Male =  $7560 \times 0.6 \times 9/14 = 2916$

Absent Females =  $7560 \times 0.4 - 2916 \times 5/9 = 3024 - 1620 = 1404$

Difference = 2916 - 1404 = 1512

**19. Ans. (D)**

Face card = 12,

Card with multiple of 2 = 20

Probability =  $12/52 \times 20/51 = 20/221$

**20. Option A**

**Solution:**

Let present age of A, B and C be  $4x, 7x$  and  $9x$  respectively.

$(4x-8) + (7x-8) + (9x-8) = 56$

$x=4.$

Present age of A, B and C are 16, 28, 36.

**21. D**

Age of abha and sapna today= 19,39

Sum=  $39+ 19-8=39+11=50$ years

**22. C**

side of the square= $36/4=9$

Length of the rectangle= $\square \times \square / \square = \square \square \square$

Breadth of the rectangle= $10+2=12$ cm

Area= $12 \times 10=120$

**23. E**

ans 240 litres

5:3

1----26litres

5:4

$(5+3) \times 26=8 \times 26=208$

Initial= $208+32=240$ litres

**24. (c)**

$$20) \quad \% \text{ increase} = \frac{12.50 - 10}{10} * 100$$

$$= 25\%$$

Initial    Final

Price = 4:5

Reduction = 5:4

$$\text{Consumption} = \frac{1}{5} * 100$$

### 25. Solution

Let the total work = 280 units (LCM of 40 and 35)

Amount of work done by A alone in one day =  $280/40 = 7$  units

Amount of work done by B alone in one day =  $280/35 = 8$  units

Amount of work done in two days =  $7 + 8 = 15$  units

So, amount of work done in 36 days =  $(36/2) \times 15 = 270$  units

Amount of work done in 37 days =  $7 + 270 = 277$  units

Remaining work = 3 units

So, the time taken by B alone to complete 3 units work =  $3/8$  days

So, the total time taken to complete the work =  $37 + 3/8 = 299/8$  days

Hence, option d.

### 26. Solution

Let the cost price be Rs.  $100x$

Marked price =  $1.60 \times 100x = \text{Rs. } 160x$

Selling price =  $0.75 \times 160x = \text{Rs. } 120x$

According to question:

$$120x - 100x = 160$$

$$\text{Or, } 20x = 160$$

$$\text{Or, } x = 8$$

Desired marked price =  $160 \times 8 = \text{Rs. } 1280$

Hence, option d.

### 27. Solution

Total age of the family =  $34 \times 6 = 204$  years

Total age of the family before the youngest member is born =  $204 - 14 \times 6 = 120$

So, average age of the family before the youngest member is born =  $120/5 = 24$  years

Hence, option d.