Statement Test 7

1. The area of the square is 192 cm2 more than that of a rectangle. If the Ratio of the length and breadth of the rectangle is 3:2 and the perimeter of the square is 96 cm, then find the perimeter of the rectangle?
a) 90 cm b) 150 cm c) 80 cm d) 110 cm e) None o these

2. The ratio of age of A and B is 5:3 and the present age of C is 20% more than that of A. If the age of C is 18 years more than the average age of A and B, then find the sum of the age of A, B and C?
a) 126 years b) 115 years c) 144 years d) 153 years e) None of these

3. The ratio of the marked price and cost price of a table is 3:2. If the shopkeeper offers a discount 25% on its marked price and the cost price of the table is Rs.1440, then find the profit earned on the table?
a) Rs.320 b) Rs.180 c) Rs.400 d) Rs.520 e) None of these

4. The time taken by the boat to cover 220 km own stream is equal to the time taken by the boat to cover 140 upstream. If the speed of the current is 8 km/hr, then find the speed of the boat in still water?
a) 62 km/hr b) 40 km/hr c) 36 km/hr d) 52 km/hr e) None of these

5. A and B started a business with an investment of Rs.5600 and Rs.4800 respectively. After 4 months, C joined the business with the initial investment of Rs. P. At the end of the year, the profit share of A is Rs.3500 out of the total profit of Rs.9500, then find the value of P? a) 6400 b) 9000 c) 5600 d) 7200 e) None of these

6. Kumar invests a certain amount in two schemes A and B in the ratio of 11:15. Scheme A offers R% per annum in simple interest for 3 years and scheme B offers 20% per annum in compound interest for 2 years. If the interest received from both schemes are equal and then find the value of R?
a) 25 b) 20 c) 15 d) 32 e) None of these

7. A vessel contains a mixture of milk and water in the ratio of 4:1. If 30 liters of mixture is taken out and replaced by water, then the quantity of milk and water becomes 16:9. Find the initial quantity of mixture?
a) 150 liters b) 120 liters c) 100 liters d) 180 liters e) None of these

8. Ratio of the total number of people in village A and B is 5:4 and the number of males in village A is 50% more than that of females. Ratio of the number of males in villages A and B is 9:8. If the number of females in village B is 200, then find the total number of people in village A?
a) 1050 b) 600 c) 900 d) 750 e) None

9. Marked price of an article is 20% more than its Cost price of the article and a discount of 10% is offered and earned a profit of Rs.120. Find the Selling price of the article, if a discount of 20% is offered on the Marked price of the article.
a) Rs.1500 b) Rs.1440 c) Rs.1560 d) Rs.1200 e) Rs.1350

10. Average weight of boys in a class is 20kg and the average weight of girls in the class is 25 kg and the total weight of the class is 770 kg. Find the average weight of the class, if the ratio of the number of boys and girls in the class is 3:2.
a) 30 kg b) 35 kg c) 29 kg d) 18 kg e) 22 kg

11. The ratio of the present age of A and B is 7:8 and the ratio of the present age of B and C is 8:9, and the age of A after 7 years is 28 years. Find the ratio of age of B after 6 years and the age of C before 3 years.
a) 5:4 b) 6:5 c) 7:8 d) 3:2 e) 5:7

12. If the ratio of the speed of the Boat and the speed of the current is 5:1, then find the total time taken by the Boat to cover 600km upstream and 720 km downstream and the average speed of the Boat and current is 18 km/hr.
a) 50 hours b) 60 hours c) 45 hours d) 55 hours e) 30 hours

13. The ratio of the efficiency of A and B is 5:4 and A and B can together complete the same work in 120/9 days and the efficiency of C is 20% more than the efficiency of A. Find the time taken by B and C together to complete the work.
a) 20 days b) 8 days c) 15 days d) 12 days e) 24 days

14. The downstream speed of the boat is 60% more than the speed of the boat in still water. If the boat covers 280 km downstream in 7 hours, then find the time taken by boat covers 150 km upstream?
a) 12 hours b) 15 hours c) 10 hours d) 16 hours e) None of these

15. The weight of A is 16 kg less than the weight of B and the weight of C is 12 kg less than the weight of B. If the average weight of A and C is 58 kg, then find the weight of C? a) 72 kg b) 60 kg c) 56 kg d) 80 kg e) None of these

16. The side of a square exceeds the side of the another square by 4 cm and the sum of the areas of the two squares is 400 cm^2. The dimensions of the square are?
(a) 8 cm and 12 cm (b) 6 cm and 10 cm (c) 12 cm and 16 cm (d) 10 cm and 18 cm (e) None of these

17. The area of the floor of a rectangular hall of length 40 m is 960 m^2. Carpets of size 6 m × 4 m are available. Then, how many carpets are required to cover the hall?
(a) 20 (b) 30 (c) 40 (d) 45 (e) None of these

18. A lawn is in the shape of rectangle of length 60 m and width 40 m. Inside the lawn there is a footpath of uniform width 1 m bordering the lawn. The area of the path is
(a) 194 m^2 (b) 196 m^2 (c) 198 m^2 (d) 200 m^2 (e) None of these

19. 4 kg of potato at Rs. 5 per kg is mixed with 8 kg of potato at Rs. 6 per kg. Find the average price of the mixture?
(a) Rs. 5.66 per kg (b) Rs. 6.50 per kg (c) Rs. 7.25 per kg (d) None

20. A shopkeeper bought 20 kg of onion at Rs. 6.50 per kg and 30 kg of onion at Rs. 7 per kg. He sold the mixture at a profit of Rs. 60. At what price did he sell per kg of the mixture of onions?
(a) Rs. 12 (b) Rs. 8 (c) Rs. 7.50 (d) Rs. 11 (e) None of these

21. In a mixture of 25 L, the ratio of acid to water is 4 : 1. Another 3 L of water is added to the mixture. The ratio of acid to water in the new mixture is:
(a) 5 : 2 (b) 2 : 5 (c) 3 : 5 (d) 5 : 3 (e) None of these

22. What would be the compound interest accrued on amount of Rs. 7400 @ 13.5 p.c.p.a. at the end of 2 years? (rounded off to two digits after decimal)
(a)Rs. 2136.87 (b) Rs. 2306.81 (c) Rs. 2032.18 (d) Rs. 2132.87 (e) None

23. Speed of boat in still water is 5 km/h. While river is flowing with a speed of 2 km/h and time taken to cover a certain distance upstream is 2 h more than time taken to cover the same distance downstream. Find the distance?
(a) 10.5 km (b) 11 km (c) 10.9 km (d) 15 km (e) None of the above

24. A man can row at 10 km/h in still water. If he takes total 5 h to go to a place 24 km away and return, then the speed of the water current is –
(a) 2 km/h (b) 3 km/h (c) 1/2 km/h (d) 1 km/h (e) None of these

25. A steamer goes downstream from one port to another in 4 h. It covers the same distance upstream in 5 h. If the speed of the stream is 2 km/h, then find the distance between the two ports.
(a) 50 km (b) 60 km (c) 70 km (d) 80 km (e) None of these

26. A boatman takes twice as long to row a distance against the stream as to row the same distance with the stream. Find the ratio of speeds of the boat in still water and the stream? (a) 2 : 1 (b) 3 : 1 (c) 1 : 2 (d) 1 : 3 (e) None of the above

27. There are 140 tickets (numbered 1 to 140) in a bowl. Find the probability of choosing a ticket which bears multiple of either 3 or 7.
A) 3/5 B) 2/9 C) 1/8 D) 3/7 E) None of these

1) Answer: C
The side of the square=96/4=24 cm
The area of the square=24*24=576 cm2
The area of the rectangle=576-192=384 cm2
The length of the rectangle=3x
The breadth of the rectangle=2x
3x*2x=384
x2=64
x=8
The length of the rectangle= 3*8=24 cm
The breadth of the rectangle= 2*8=16 cm
The perimeter of the rectangle=2*(24+16)=80 cm
2) Answer: A
Let the age of A=5x
And the age of B=3x
The age of C=5x*120/100=6x
6x-(5x+3x)/2=18
6x-4x=18
x=9
The sum of the age of A, B and
C=(5+3+6)*9=14*9=126 years
3) Answer: B
CP of the table=Rs.1440
MP of the table=1440*3/2=Rs.2160
Required profit=2160*75/100-1440=Rs.180
4) Answer: C
The speed of the stream=8 km/hr
The speed of the boat=x km/hr
220/(x+8)=140/(x-8)
220x-1760=140x+1120
80x=2880
x=36
5) Answer: D
Ratio of profit share of A, B and C=5600*12:
4800*12: P*8
=8400:7200:P
8400/(7200+P)=3500/6000
8400/(7200+P)=7/12
8400*12/7=(7200+P)
P=14400-7200
P=7200
6) Answer: B
11x*R*3/100=[15x*(1+20/100)2-15x]
33x*R/100=21.6x-15x
33R/100=6.6
R=660/33
R=20
7) Answer: A
Milk in initial mixture=4x
Water in initial mixture=1x
Milk and water in the initial mixture=4x+1x=5x
(4x-30*4/5)/(1x-30*1/5+30)=16/9
(4x-24)*9=(1x+24)*16
36x-216=16x+384
20x=600
x=30
The quantity of initial mixture =5*30=150 liters
8) Answer: D
Let the total number of people in village A=5x
And the total number of people in village B=4x
The number of males in village A=5x*3/(3+2)=3x
The number of females in village A=5x-3x=2x
The number of males in village B=3x*8/9=8x/3
The number of females in village B=4x-8x/3=4x/3
4x/3=200
4x=600
x=150
The total number of people in village
A=5*150=750
9) Answer: B
Cost price of the article = 100x
Marked price of the article = 100x+100x*20/100 = 120x
Selling price of the article = 120x-120x*10/100 = 108x
Profit earned = 108x-100x = 8x
8x = 120
x = 15
Marked price of the article = 120*15 = Rs.1800
Selling price of the article = 1800 – 1800*20/100 = Rs.1440
10) Answer: E
Number of boys in the class = 3x
Number of girls in the class = 2x
20*3x + 25*2x = 770
x = 7
Number of boys in the class = 3*7 = 21
Number of girls in the class = 2*7 = 14
Average weight of the class = 770/(21+14) = 22kg
11) Answer: A
Ratio of present age of A, B and C = 7:8:9
Present age of A = 28-7 = 21 years
Present age of B = 21*8/7 = 24 years
Present age of C = 21*9/7 = 27 years
Required ratio = (24+6):(27-3) = 5:4
12) Answer: C
Speed of the Boat = 5x
Speed of the current = x
Total speed of the Boat and current = 18 * 2 = 36
km/hr
6x = 36
x = 6
Speed of the Boat = 5*6 = 30 km/hr
Speed of the current = 6 km/hr
Total time taken = 600/(30-6) + 720/(30+6) = 45
hours
13) Answer: D

Time taken by A alone complete the work = 4x
Time taken by B alone complete the work = 5x
1/A + 1/B = 9/120
x = 6
Time taken by A alone = 4*6 = 24 days
Time taken by B alone = 5*6 = 30 days
Ratio between time taken by A and C = 6:5
Time taken by C alone = 24 * 5/6= 20 days
Time taken by B and C together = (1/30) + (1/20)
= 1/12 = 12 days

14) Answer: B

The downstream speed of the boat=280/7=40 km/hr
The speed of the boat=40*100/160=25 km/hr
The speed of the stream=40-25=15 km/hr
The upstream speed of the boat=25-15=10 km/hr
Required time=150/10=15 hours

15) Answer: B

The weight of B=x kg
The weight of A=(x-16) kg
The weight of C=(x-12) kg
(x-16+x-12)/2=58
2x-28=116
2x=144
x=72
The weight of B=72 kg
The weight of C=72-12=60 kg

16

(c); Let side of square = x cm

Side of another square = (x + 4) cm

$\therefore \quad x^2 + (x+4)^2 = 400$

$x^2 + x^2 + 16 + 8x = 400$

$2x^2 + 8x - 384 = 0 \Rightarrow x^2 + 4x - 192 = 0$

$x^2 + 16x - 12x - 192 = 0$

$x(x+16) - 12(x+16) = 0$

$(x-12)(x+16) = 0$

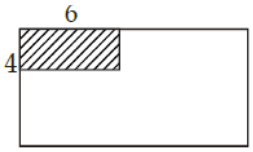
$\therefore \quad x = 12$ (– 16 not possible)

$\therefore$ side of one square = 12 cm

side of another square = 16 cm

17

(c); Given,



Area of the floor = 960 m²

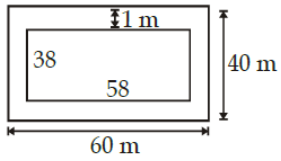
Area of one carpet = 6 × 4 = 24 m²

$\therefore$ No. of carpet required $= \dfrac{\text{Area of floor}}{\text{Area of one carpet}}$

$= \dfrac{960}{24} = 40$

18

(b); Length of the outer rectangle = 60 m



Breadth of the outer rectangle = 40 m

$\therefore$ Area = 60 × 40 = 2400 m².

Width of path = 1 m

Length of the inner rectangle = 60 m – (1 + 1) m
= 58 m

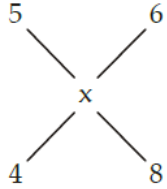
Breadth of the inner rectangle = 40 – 2 = 38 m

$\therefore$ Area = 58 × 38 = 2204 m²

Area of path
= [Area of outer rectangle] – [Area of inner rectangle]
= 2400 – 2204 = 196 m²

19

(a); Let average price = x per kg.



$\therefore \dfrac{x-5}{6-x} = \dfrac{8}{4}$

$4x - 20 = 48 - 8x \Rightarrow 12x = 68 \Rightarrow x = 5.66$

20

(b); 6.5 7

x

20 30

$\frac{x-6.5}{7-x}=\frac{30}{20}\Rightarrow 2x-13=21-3x$

$5x=34 \Rightarrow x=6.8$ per kg.

$\therefore$ Total value after mixture $=6.8\times 50=340$ Rs.

Sold the mixture in $(340+60)=400$ rs.

$\therefore$ required value per kg $=\frac{400}{50}=8$ per kg.

21

(a); Total mixture = 25 L

Acid $=\frac{4}{5}\times 25=20$ L $\Rightarrow$ Water = 5 L

After addtion of 3L of water

New ratio = 20 : 8 = 5 : 2

22

(d); $CI=7400\left[\left(1+\frac{13.5}{100}\right)^2-1\right]=7400\left[\left(\frac{113.5}{100}\right)^2-1\right]$

$=7400\left[\frac{12882.25-10000}{10000}\right]=7400\times\frac{2882.25}{10000}=$ Rs. 2132.87

23

(a); Speed of boat in still water = 5 km/h

speed of current = 2 km/h

Let distance = d

$\frac{d}{5-2}=2+\frac{d}{5+2}\Rightarrow\frac{d}{3}=2+\frac{d}{7}$

$\frac{d}{3}-\frac{d}{7}=2 \Rightarrow d=10.5$ km.

24

(a); Speed of boat in still water = 10 km/h

Let speed of current = y km/h

$\frac{24}{10+y}+\frac{24}{10-y}=5\Rightarrow 24\left(\frac{10+y+10-y}{(10+y)(10-y)}\right)=5$

$\frac{24\times 20}{100-y^2}=5\Rightarrow 100-y^2=96\Rightarrow y^2=4$

y = 2 (Neglect – ve sign)

25

(d); Speed of the stream = 2 km/h

Let speed of the boat in still water = x km/h

And distance between two boats = d km

Then $\frac{d}{x+2}=4\Rightarrow d-4x=8$ ... (1)

$\frac{d}{x-2}=5\Rightarrow d-5x=-10$ ... (2)

From eq. (1) and (2)

$d-4x-d+5x=8+10 \Rightarrow x=18$

From eq. (1)

$d-18\times 4=8 \Rightarrow d=80$ km/h

26

(b); Let speed of boat in still water = x

speed of current = y $\Rightarrow$ distance = d

Then $\frac{d}{x-y}=\frac{2d}{x+y}\Rightarrow 2x-2y=x+y$

$x=3y \Rightarrow \frac{x}{y}=\frac{3}{1}$

Required ratio = 3 : 1

27. D) 3/7

Solution:

Number of multiples of 3 in 140 = 140/3 = 46

Number of multiples of 7 in 140 = 140/7 = 20

Number of multiples of 3×7= 21 in 140 = 140/21 = 6

So required probability = (46+20 – 6)/140 = 60/140 = 3/7