1) A boat covers 120 km along with stream in x hours. Ratio of the speed of boat in still water to current is 3:1. If the speed of boat is increased by 20% and covers 92 km downstream in (x – 2) hours, then find the time taken by the boat to cover 100 km against stream.

A.8 hours

B.12.5 hours

C.10 hours

D.20 hours

E.None of these

Explanation

Answer: C

Boat speed = 3a

Current speed = a

120/4a = x

30 = ax

92/((3a * 120/100) + a) = (x – 2)

20 = a (x – 2)

20 = ax – 2a

20 = 30 – 2a

a = 5

Speed of boat = 3 * 5 = 15

Required time = 100/(15 – 5) = 10 hours

2) P alone can do a work in 20 days while Q alone can do the same work in 25 days. P alone does the work for first 2 days and then Q joins. P and Q work together for the next 5 days and then P alone does the remaining work. How many days will P take to complete the remaining work?

A.3 days

B.5 days

C.7 days

D.9 days

E.None of these

Explanation

Answer: D

Total work = 100 units

P = 100/20 = 5 units/day

Q = 100/25 = 4 units/day

Total work done in 7 days = 5 * 2 + 5 * (5 + 4) = 55 units

Remaining work = 100 – 55 = 45 units

Days taken by P = 45/5 = 9 days

3) A and B started a business and the initial investment of B is 25% more than the initial investment of A. After 8 months, A added Rs.2000 to its initial investment and the ratio of the profit share of A and B in the business at the end of the year is 8:9, then what is the difference between the initial investment of A and B?

A.Rs.1500

B.Rs.2000

C.Rs.2400

D.Rs.1800

E.None of these

Explanation

Answer: A

Initial investment of A = 4x

Initial investment of B = 4x * 125/100 = 5x

Profit ratio of A and B = (4x * 8 + (4x + 2000) * 4):(5x * 12) = 8:9

According to the question,

(32x + 16x + 8000) / (5x * 12) = (8 / 9)

(32x + 16x + 8000) * 9 = 8 * (5x * 12)

432x + 72000 = 480x

x = Rs.1500

Required Difference = Rs.1500

4) Aman invested Rs. 1440 for 2 years at the rate of x% in scheme X at compound interest annually and gets a total amount of Rs. 2560. If he invests Rs. 3500 in scheme Y at simple interest for 6 years at same rate of interest. Then find the simple interest earned by Aman from scheme Y.

A.Rs. 7000

B.Rs. 8500

C.Rs. 10,200

D.Rs. 6800

E.None of these

Explanation

Answer: A

Amount invested by Aman = Rs. 1440

And he gets after 2 years = Rs. 2560

Then, according to the question,

$2560 = 1440 \times (1 + R/100)^2$

$256/144 = (1 + R/100)^2$

$4/3 = (100 + R)/100$

$400 = 300 + 3R$

$R = 33\ 1/3\%$

So, the simple interest earned by Aman is,

$= 3500 \times 100/3 \times 6/100$

= Re. 7000

5) A box contains x red balls, 4 yellow balls and 5 blue balls. If the probability of one blue ball is taken at random being 1/3, then what is the probability that two red balls is taken from the box at random?

A.1/5

B.1/6

C.1/7

D.1/3

E.1/8

Explanation

Answer: C

$5C_1/(9 + x)C_1 = 1/3$

$9 + x = 15$

$x = 6$

Required probability = $6C_2/15C_2$

$= 6 * 5/15 * 14$

$= 1/7$

6) The marked price of cycle and Watch is Rs.2800 and Rs.3000 respectively. If the shopkeeper allows the discount on marked price of the cycle is Rs.800 which is 80% of the discount of watch, then what is the difference between the selling price of watch and cycle?

A.Rs.500

B.Rs.550

C.Rs.600

D.Rs.450

E.None of these

Explanation

Answer: E

MP of cycle = Rs.2800

MP of Watch = Rs.3000

SP of Cycle = 2800 – 800 = Rs.2000

Discount of watch = 800 * 100/80 = Rs.1000

SP of watch = 3000 – 1000 = Rs.2000

Difference = 2000 – 2000 = 0

7) The volume of a sphere is 4851cm^3, the radius of the cylinder is twice the radius of the sphere and total surface area of the cylinder is 3960cm^2, then find the height of the cylinder.

A.14cm

B.12cm

C.6cm

D.9cm

E.21cm

Explanation

Answer: D

Volume of the sphere = $4851cm^3$

$(4/3)\ \pi r^3 = 4851$

Therefore radius r = 21/2 cm

Radius of the cylinder = 2(21/2) = 21cm

Total surface area of the cylinder = $3960cm^2$

$2\pi rh + 2\pi r^2 = 3960$

$2\pi(21)h + 2\pi(21*21) = 3960$

$2\times (22/7)\ (21)\times h = 1188$

Therefore height of the cylinder = 9 cm

8) A milkman has the mixture of milk and water in the ratio of 5: 3. If he sold 16 liters of the mixture and replaced with same quantity of water, so the ratio becomes 15: 17. What is the initial quantity of the mixture?

A.48 liters

B.56 liters

C.64 liters

D.80 liters

E.None of these

Explanation

Answer: C

Milk in 16 liters = 5/8 * 16 = 10 liters

Water in 16 liters = 3/8 * 16 = 6 liters

(5x – 10)/(3x – 6 + 16) = 15/17

45x + 150 = 85x – 170

40x = 320

x = 8 liters

Total quantity of the mixture = 8 * 8 = 64 liters

9) Seven students in a class and the average weight of the students is 47 kg. If the average weight of first four students in the class is 36 kg and the average weight of last four students in the class is 55.25 kg, then what is the weight of 4^{th} student in the class?

A.36 kg

B.45 kg

C.55 kg

D.48 kg

E.32 kg

Explanation

Answer: A

Total weight of the class = 47 * 7 = 329

Total Weight of first 4 students = 36 * 4 = 144

Total weight of last 4 students = 55.25 * 4 = 221

Weight of 4^{th} students in the class = (144 + 221) – 329 = 36 kg

10) Ratio of the number of apple to orange in Box A is 3: 4, ratio of the number of banana to grapes in Box A is 5: 6 and the ratio of the number of orange to grapes in Box A is 2: 3. If all the fruits are mixed, then what is the ratio of the number of apple, orange, banana and grapes in the box?

A.3: 4: 5: 6

B.3: 2: 5: 6

C.3: 3: 4: 5

D.2: 3: 5: 6

E.None of these

Explanation

Answer: A

A/O = 3/4

B/G = 5/6

O/G = 2/3

A: O: B: G = 12: 16: 20: 24

= 3: 4: 5: 6

Direction (11-15): Find out the wrong number in the following number series.

11) 100, 175, 240, 305, 350, 375

A.375

B.305

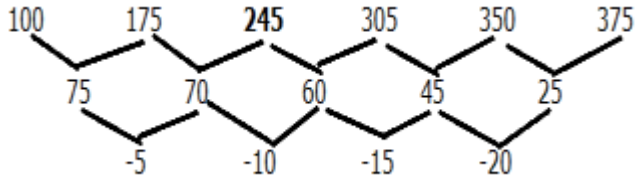
C.175

D.240

E.100

Explanation

Answer: D



12) 12.5, 14, 16, 23, 35, 59

A.14

B.35

C.16

D.23

E.59

Explanation

Answer: C

12.5 + 1.5 = 14

14 + 3 = **17**

17 + 6 = 23

23 + 12 = 35

35 + 24 = 59

13) 15, 13, 16, 11, 19, 7

A.7

B.19

C.15

D.13

E.16

Explanation

Answer: B

15 – 2 = 13

13 + 3 = 16

16 – 5 = 11

11 + 7 = **18**

18 –11 = 7

14) 200, 225, 275, 340, 450, 575

A.450

B.575

C.225

D.200

E.340

Explanation

Answer: E

200 + 25 = 225

225 + 50 = 275

275 + 75 = **350**

350 + 100 = 450

450 + 125 = 575

15) 2, 10, 26, 56, 122, 250

A.56

B.2

C.10

D.122

E.250

Explanation

Answer: A

(2 + 3) * 2 = 10

(10 + 3) * 2 = 26

(26 + 3) * 2 = **58**

(58 + 3) * 2 = 122

(122 + 3) * 2 = 250

16) When a number (X+10) is increased by 20% it becomes (Y+15). If 20% of a number (Y+25) is 14 then find the value of X:Y?

A.5:4

B.4:5

C.3:2

D.1:2

E.None of these

Explanation

Answer: E

According to question,

(Y+25) *20/100=14

Or, (Y+25) =70, or, Y=45

So, (X+10) *120/100 = 60

Or, X= 50-10=40

So, (X:Y)=40:45=8:9

17) Car A covers 200 km in t hours and car B covers 100 km in (2t/5) hours. If car A covers 220 km in 5.5 hours, then find the distance (Km) covered by car B in 2t hours?

A.590 km

B.580 km

C.500 km

D.530 km

E.None of these

Explanation

Answer: C

Speed of car A = 220/5.5=40 km/hr.

So, t=200/40= 5 hours.

Speed of car B = 100/(2*5/5) = 50 km/hr.

Required distance = 50*5*2=500 km

18) Radius of the cylinder is equal to the radius of the circle, whose circumference is 132 units. If the height of the cylinder is 14.28% less the radius of the cylinder, then find the curved surface area of the cylinder?

A.2376 $unit^2$

B.2366 $unit^2$

C.2356 $unit^2$

D.2476 $unit^2$

E.None of these

Explanation

Answer: A

Radius of circle is r, so, 2*(22/7) *r=132

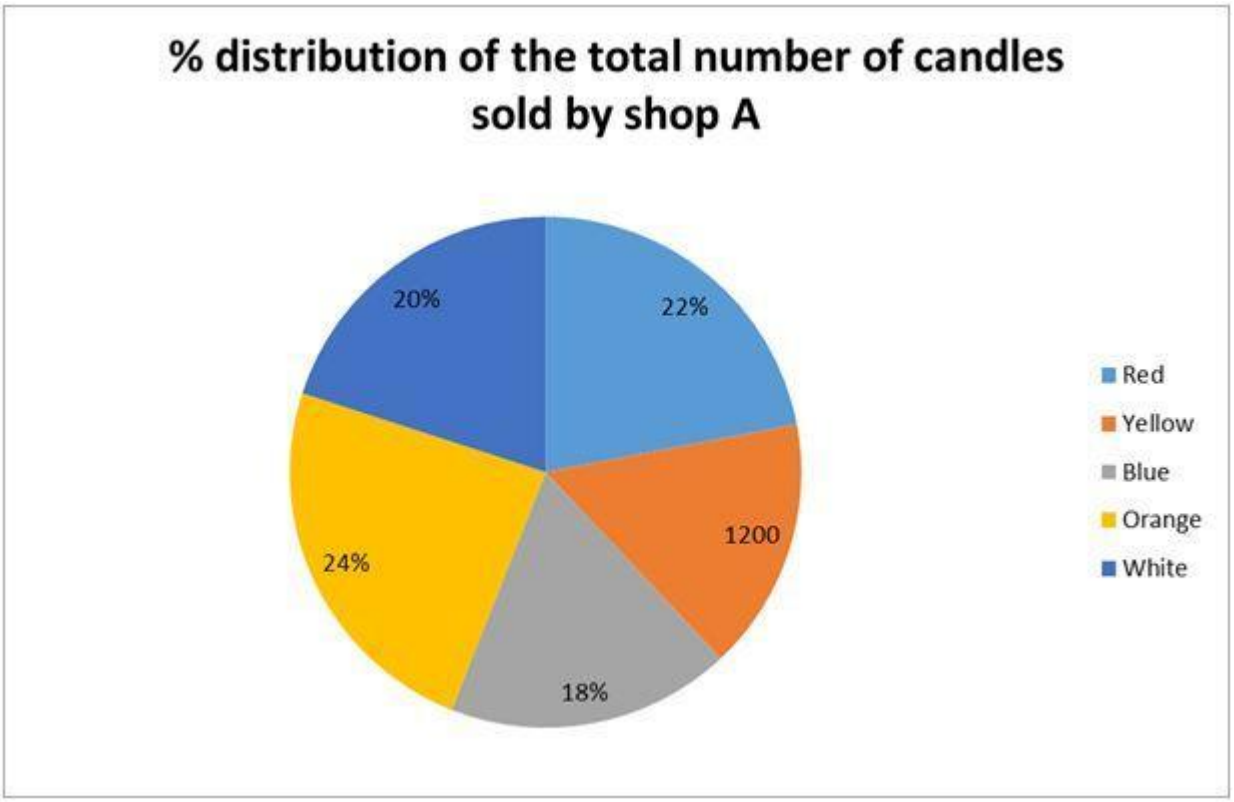
Or, r=132*7/77=21

Height of cylinder is = 21*(100-14.28)/100 =18

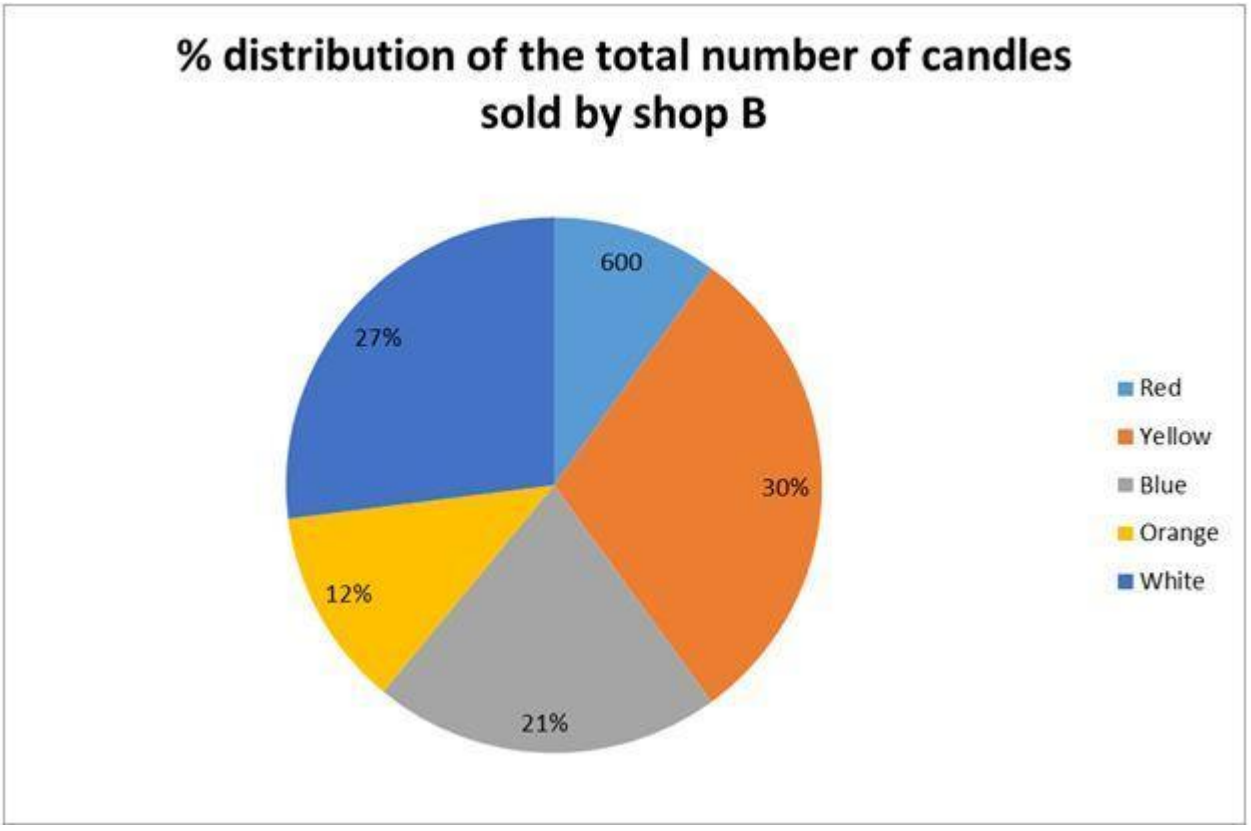
So, curved surface area of cylinder is = 2 * (22/7) * 21*18 =2376 $unit^2$

Direction (19-23): Study the following information carefully and answer the questions.

The given pie chart shows the percentage distribution of the total number of red, yellow, blue, orange and white candles sold by shop A.



The given pie chart shows the total number of red, yellow, blue, orange and white candles sold by shop B.



19) If the ratio of the total number of red, yellow and blue candles sold by shop C is 2:3:4 respectively and the total number of red, yellow and blue candles sold by shop C is equal to 80% of the total number of blue candles sold by shop A, then find the total number of red and blue candles sold by shop C?

A.650

B.880

C.720

D.940

E.None of these

Explanation

Shop A:

Let the percentage of the total number of red, yellow, blue, orange and white candles sold = 100%

And the percentage of the total number of yellow candles sold = x%

22% + x% + 18% + 24% + 20% = 100%

x% = 16%

The total number of red, yellow, blue, orange and white candles sold = 1200 * 100/16 = 7500

The total number of red candles sold = 7500 * 22/100 = 1650

The total number of blue candles sold = 7500 * 18/100 = 1350

The total number of orange candles sold = 7500 * 24/100 = 1800

The total number of white candles sold = 7500 * 20/100 = 1500

Shop B:

Let the percentage of the total number of red, yellow, blue, orange and white candles sold = 100%

And the percentage of the total number of red candles sold = y%

y% + 30 + 21 + 12 + 27 = 100%

y% = 10%

The total number of red candles sold = 600

The total number of red, yellow, blue, orange and white candles sold = 600 * 100/10 = 6000

The total number of yellow candles sold = 6000 * 30/100 = 1800

The total number of blue candles sold = 6000 * 21/100 = 1260

The total number of orange candles sold = 6000 * 12/100 = 720

The total number of white candles sold = 6000 * 27/100 = 1620

Colour	The total number of candles sold by shop A	The total number of candles sold by shop B
Red	1650	600
Yellow	1200	1800
Blue	1350	1260
Orange	1800	720
White	1500	1620

Answer: C

The total number of yellow candles sold by shop C = 1350 * 80/100 = 1080

The total number of red and blue candles sold by shop C = 1080 * (2 + 4)/(2 + 3 + 4) = 1080 * 6/9 = 720

20) Find the difference between the total number of red and orange candles sold by shop B and the total number of yellow candles by sold A?

A.120

B.200

C.230

D.110

E.None of these

Explanation

Shop A:

Let the percentage of the total number of red, yellow, blue, orange and white candles sold = 100%

And the percentage of the total number of yellow candles sold = x%

22% + x% + 18% + 24% + 20% = 100%

x% = 16%

The total number of red, yellow, blue, orange and white candles sold = 1200 * 100/16 = 7500

The total number of red candles sold = 7500 * 22/100 = 1650

The total number of blue candles sold = 7500 * 18/100 = 1350

The total number of orange candles sold = 7500 * 24/100 = 1800

The total number of white candles sold = 7500 * 20/100 = 1500

Shop B:

Let the percentage of the total number of red, yellow, blue, orange and white candles sold = 100%

And the percentage of the total number of red candles sold = y%

y% + 30 + 21 + 12 + 27 = 100%

y% = 10%

The total number of red candles sold = 600

The total number of red, yellow, blue, orange and white candles sold = 600 * 100/10 = 6000

The total number of yellow candles sold = 6000 * 30/100 = 1800

The total number of blue candles sold = 6000 * 21/100 = 1260

The total number of orange candles sold = 6000 * 12/100 = 720

The total number of white candles sold = 6000 * 27/100 = 1620

Colour	The total number of candles sold by shop A	The total number of candles sold by shop B
Red	1650	600
Yellow	1200	1800
Blue	1350	1260
Orange	1800	720
White	1500	1620

Answer: A

The total number of red and orange candles sold by shop B = 600 + 720 = 1320

The total number of yellow candles sold by shop A = 1200

Required difference = 1320 – 1200 = 120

21) The total number of white candles sold by shop B is what percentage more/less than the total number of white candles sold by shop A?

A.10% less

B.15% more

C.20% less

D.8% more

E.None of these

Explanation

Shop A:

Let the percentage of the total number of red, yellow, blue, orange and white candles sold = 100%

And the percentage of the total number of yellow candles sold = x%

22% + x% + 18% + 24% + 20% = 100%

x% = 16%

The total number of red, yellow, blue, orange and white candles sold = 1200 * 100/16 = 7500

The total number of red candles sold = 7500 * 22/100 = 1650

The total number of blue candles sold = 7500 * 18/100 = 1350

The total number of orange candles sold = 7500 * 24/100 = 1800

The total number of white candles sold = 7500 * 20/100 = 1500

Shop B:

Let the percentage of the total number of red, yellow, blue, orange and white candles sold = 100%

And the percentage of the total number of red candles sold = y%

y% + 30 + 21 + 12 + 27 = 100%

y% = 10%

The total number of red candles sold = 600

The total number of red, yellow, blue, orange and white candles sold = 600 * 100/10 = 6000

The total number of yellow candles sold = 6000 * 30/100 = 1800

The total number of blue candles sold = 6000 * 21/100 = 1260

The total number of orange candles sold = 6000 * 12/100 = 720

The total number of white candles sold = 6000 * 27/100 = 1620

Colour	The total number of candles sold by shop A	The total number of candles sold by shop B
Red	1650	600
Yellow	1200	1800
Blue	1350	1260
Orange	1800	720
White	1500	1620

Answer: D

Required percentage = (1620 – 1500)/1500 * 100 = 120/1500 * 100 = 8% more

22) Find the ratio of the total number of yellow and orange candles sold by shop A to the total number of yellow candles sold by shop B?

A.9:8

B.5:3

C.4:7

D.2:1

E.None of these

Explanation

Shop A:

Let the percentage of the total number of red, yellow, blue, orange and white candles sold = 100%

And the percentage of the total number of yellow candles sold = x%

22% + x% + 18% + 24% + 20% = 100%

x% = 16%

The total number of red, yellow, blue, orange and white candles sold = 1200 * 100/16 = 7500

The total number of red candles sold = 7500 * 22/100 = 1650

The total number of blue candles sold = 7500 * 18/100 = 1350

The total number of orange candles sold = 7500 * 24/100 = 1800

The total number of white candles sold = 7500 * 20/100 = 1500

Shop B:

Let the percentage of the total number of red, yellow, blue, orange and white candles sold = 100%

And the percentage of the total number of red candles sold = y%

y% + 30 + 21 + 12 + 27 = 100%

y% = 10%

The total number of red candles sold = 600

The total number of red, yellow, blue, orange and white candles sold = 600 * 100/10 = 6000

The total number of yellow candles sold = 6000 * 30/100 = 1800

The total number of blue candles sold = 6000 * 21/100 = 1260

The total number of orange candles sold = 6000 * 12/100 = 720

The total number of white candles sold = 6000 * 27/100 = 1620

Colour	The total number of candles sold by shop A	The total number of candles sold by shop B
Red	1650	600
Yellow	1200	1800
Blue	1350	1260
Orange	1800	720
White	1500	1620

Answer: B

The total number of yellow and orange candles sold by shop A = 1200 + 1800 = 3000

Required ratio = 3000:1800 = 5:3

23) Out of the total number of blue candles manufactured by shops A and B, 25% and 40% of the candles are unsold. Find the total number of blue candles unsold by shops A and B together?

A.1020

B.1560

C.1290

D.1440

E.None of these

Explanation

Shop A:

Let the percentage of the total number of red, yellow, blue, orange and white candles sold = 100%

And the percentage of the total number of yellow candles sold = x%

22% + x% + 18% + 24% + 20% = 100%

x% = 16%

The total number of red, yellow, blue, orange and white candles sold = 1200 * 100/16 = 7500

The total number of red candles sold = 7500 * 22/100 = 1650

The total number of blue candles sold = 7500 * 18/100 = 1350

The total number of orange candles sold = 7500 * 24/100 = 1800

The total number of white candles sold = 7500 * 20/100 = 1500

Shop B:

Let the percentage of the total number of red, yellow, blue, orange and white candles sold = 100%

And the percentage of the total number of red candles sold = y%

y% + 30 + 21 + 12 + 27 = 100%

y% = 10%

The total number of red candles sold = 600

The total number of red, yellow, blue, orange and white candles sold = 600 * 100/10 = 6000

The total number of yellow candles sold = 6000 * 30/100 = 1800

The total number of blue candles sold = 6000 * 21/100 = 1260

The total number of orange candles sold = 6000 * 12/100 = 720

The total number of white candles sold = 6000 * 27/100 = 1620

Colour	The total number of candles sold by shop A	The total number of candles sold by shop B
Red	1650	600
Yellow	1200	1800
Blue	1350	1260
Orange	1800	720
White	1500	1620

Answer: C

The total number of blue candles unsold by shop A = 1350 * 25/75 = 450

The total number of blue candles unsold by shop B = 1260 * 40/60 = 840

The total number of blue candles unsold by shops A and B = 450 + 840 = 1290

Direction (24-26): Following questions contain two statements as statement I and statement II. You have to determine which statement/s is/are necessary to answer the question and give answer as,

24) Find the time taken by Pipe C alone to fill the tank.

Statement I: Time taken by Pipes A, B and C together to fill the tank is $1/3^{rd}$ of the time taken by Pipe B alone to fill the tank.

Statement II: Pipe A alone can fill the tank in 20 minutes and the ratio of the efficiency of Pipe A to Pipe B is 3:4.

A.The data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question

B.The data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question

C.The data either in statement I alone or in statement II alone is sufficient to answer the question

D.The data given in both statements I and II together are not sufficient to answer the question

E.The data given in both statements I and II together are necessary to answer the question.

Explanation

Answer: E

From statement I,

1/A + 1/B + 1/C = 3/B

So, Statement I alone is not sufficient to answer the question.

From statement II,

Time taken by Pipe A alone to fill the tank = 20 minutes

Ratio of the time taken by Pipe A to Pipe B to fill the tank = 4:3

Time taken by Pipe B alone to fill the tank = 20 * 3/4 = 15 minutes

So, Statement II alone is not sufficient to answer the question.

From statement I and II,

1/A + 1/B + 1/C = 3/15

1/20 + 1/15 + 1/C = 1/5

1/C = 1/5 – 1/20 – 1/15

1/C = (12 – 3 – 4)/60 = 5/60 = 1/12

Time taken by Pipe C alone to fill the tank = 12 minutes

Both statements are necessary to answer the question.

25) Find the distance covered by the car in 6 hours.

Statement I: The truck covers 400 km in x hours and the speed of the truck is 25% more than that of the car.

Statement II: Ratio of the distance covered by the car to truck is 4:5 and the ratio of the time taken by the car to truck to cover this distance is 1:1 and the speed of the car is 10 km/hr less than the speed of the truck.

A.The data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question

B.The data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question

C.The data either in statement I alone or in statement II alone is sufficient to answer the question

D.The data given in both statements I and II together are not sufficient to answer the question

E.The data given in both statements I and II together are necessary to answer the question.

Explanation

Answer: B

From statement I,

Speed of the truck = 400/x

Speed of the car = 400/x * 100/125

So, Statement I alone is not sufficient to answer the question.

From statement II,

Let the distance covered by the car and the truck be 4a km and 5a km respectively.

Let the speed of the car be (x – 10) km/hr and the speed of the truck be x km/hr.

5a/x = 4a/(x – 10)

5/x = 4/(x – 10)

5x – 50 = 4x

x = 50 km/hr

Required distance = 40 * 6 = 240 km

So, Statement II alone is sufficient to answer the question.

26) Find the value of R?

Statement I: Raja invested a certain amount in simple interest at the rate of R% per annum for 5 years and the interest received by Raja is 50% more than the amount invested.

Statement II: Savi invested Rs.1000 in compound interest at the rate of R% per annum for 2 years and after 2 years, the interest received by Savi is Rs.690.

A.The data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question

B.The data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question

C.The data either in statement I alone or in statement II alone is sufficient to answer the question

D.The data given in both statements I and II together are not sufficient to answer the question

E.The data given in both statements I and II together are necessary to answer the question.

Explanation

Answer: C

From statement I,

The principal of Raja = a

a * R * 5/100 = a * 150/100

R = 30

From statement II,

$1000 * (1 + R/100)^2 - 1000 = 690$

$1000 ((1 + R/100)^2 - 1) = 690$

$(1 + R/100)^2 = 690/1000 + 1$

$(1 + R/100)^2 = 169/100$

$(1 + R/100)^2 = (13/10)^2$

100 + R = 13 * 100/10

R = 130 – 100

R = 30

Direction (27-31): Read the following information carefully and answer the questions given below.

The given table chart shows the ratio of the number of brown shoes sold to the number of grey shoes sold in June in four different shops namely A, B, C and D and also given the total number of shoes sold in July in these shops.

Total number of shoes sold = Number of brown shoes sold + Number of grey shoes sold

Shop	The ratio of the number of brown shoes sold to the number of grey shoes sold in June	Total number of shoes sold in July
A	7:9	2.5 times the number of brown shoes sold in June
B	5:6	80 less than the total number of shoes sold in June
C	6:7	3.5 times 1/3rd of the total number of shoes sold in June
D	7:5	120% more than the number of grey shoes sold in June

Note:-

The difference between the number of brown shoes sold and grey sold in June in A, B, C and D is 100, 80, 60, and 150 respectively.

27) Find the difference between the number of grey shoes sold in June in shop B and the total number of shoes sold in July in shop C.

A.375

B.385

C.430

D.405

E.None of these

Explanation

Shop A:

Total number of shoes sold in June = 100 * 16/2 = 800

Number of brown shoes sold in June = 800 * 7/16 = 350

Number of grey shoes sold in June = 800 – 350 = 450

Total number of shoes sold in July = 350 * 2.5 = 875

Shop B:

Total number of shoes sold in June = 80 * 11/1 = 880

Number of brown shoes sold in June = 880 * 5/11 = 400

Number of grey shoes sold in June = 880 – 400 = 480

Total number of shoes sold in July = 880 – 80 = 800

Shop C:

Total number of shoes sold in June = 60 * 13/1 = 780

Number of brown shoes sold in June = 780 * 6/13 = 360

Number of grey shoes sold in June = 780 – 360 = 420

Total number of shoes sold in July = 780 * 1/3 * 3.5 = 260 * 3.5 = 910

Shop D:

Total number of shoes sold in June = 150 * 12/2 = 900

Number of brown shoes sold in June = 900 * 7/12 = 525

Number of grey shoes sold in June = 900 – 525 = 375

Total number of shoes sold in July = 375 + 375 * 120/100 = 825

Shop	June			Total number of shoes sold in July
	Total number of shoes sold	Number of brown shoes sold	Number of grey shoes sold	
A	800	350	450	875
B	880	400	480	800
C	780	360	420	910
D	900	525	375	825

Answer: C

Required difference = 910 – 480 = 430

28) The number of brown shoes sold in July in shop A is 20% more than that of in the previous month in shop A and the number of brown shoes sold in July in shop D is 125 less than the number of brown shoes sold in the previous month in shop D. Find the total number of grey shoes sold in shops A and D together in July.

A.880

B.950

C.800

D.780

E.None of these

Explanation

Shop A:

Total number of shoes sold in June = 100 * 16/2 = 800

Number of brown shoes sold in June = 800 * 7/16 = 350

Number of grey shoes sold in June = 800 – 350 = 450

Total number of shoes sold in July = 350 * 2.5 = 875

Shop B:

Total number of shoes sold in June = 80 * 11/1 = 880

Number of brown shoes sold in June = 880 * 5/11 = 400

Number of grey shoes sold in June = 880 – 400 = 480

Total number of shoes sold in July = 880 – 80 = 800

Shop C:

Total number of shoes sold in June = 60 * 13/1 = 780

Number of brown shoes sold in June = 780 * 6/13 = 360

Number of grey shoes sold in June = 780 – 360 = 420

Total number of shoes sold in July = 780 * 1/3 * 3.5 = 260 * 3.5 = 910

Shop D:

Total number of shoes sold in June = 150 * 12/2 = 900

Number of brown shoes sold in June = 900 * 7/12 = 525

Number of grey shoes sold in June = 900 – 525 = 375

Total number of shoes sold in July = 375 + 375 * 120/100 = 825

Shop	June			Total number of shoes sold in July
	Total number of shoes sold	Number of brown shoes sold	Number of grey shoes sold	
A	800	350	450	875
B	880	400	480	800
C	780	360	420	910
D	900	525	375	825

Answer: A

Number of brown shoes sold in July in shop A = 350 * 120/100 = 420

Number of grey shoes sold in July in shop A = 875 – 420 = 455

Number of brown shoes sold in July in shop D = 525 – 125 = 400

Number of grey shoes sold in July in shop D = 825 – 400 = 425

Required sum = 455 + 425 = 880

29) If the total number of shoes sold in June in shop E is the average of the total number of shoes sold in June in shop C and total number of shoes sold in July in shop B and the number of brown shoes sold in June in shop E is 335, then find the number of grey shoes sold in June in shop E.

A.400

B.425

C.485

D.455

E.None of these

Explanation

Shop A:

Total number of shoes sold in June = 100 * 16/2 = 800

Number of brown shoes sold in June = 800 * 7/16 = 350

Number of grey shoes sold in June = 800 – 350 = 450

Total number of shoes sold in July = 350 * 2.5 = 875

Shop B:

Total number of shoes sold in June = 80 * 11/1 = 880

Number of brown shoes sold in June = 880 * 5/11 = 400

Number of grey shoes sold in June = 880 – 400 = 480

Total number of shoes sold in July = 880 – 80 = 800

Shop C:

Total number of shoes sold in June = 60 * 13/1 = 780

Number of brown shoes sold in June = 780 * 6/13 = 360

Number of grey shoes sold in June = 780 – 360 = 420

Total number of shoes sold in July = 780 * 1/3 * 3.5 = 260 * 3.5 = 910

Shop D:

Total number of shoes sold in June = 150 * 12/2 = 900

Number of brown shoes sold in June = 900 * 7/12 = 525

Number of grey shoes sold in June = 900 – 525 = 375

Total number of shoes sold in July = 375 + 375 * 120/100 = 825

Shop	June			Total number of shoes sold in July
	Total number of shoes sold	Number of brown shoes sold	Number of grey shoes sold	
A	800	350	450	875
B	880	400	480	800
C	780	360	420	910
D	900	525	375	825

Answer: D

Total number of shoes sold in June in shop E = (780 + 800)/2 = 790

Number of grey shoes sold in June in shop E = 790 – 335 = 455

30) Find the ratio of the total number of shoes sold in June in shop D to the number of brown shoes sold in June in shop B.

A.7:6

B.9:4

C.5:7

D.8:5

E.None of these

Explanation

Shop A:

Total number of shoes sold in June = 100 * 16/2 = 800

Number of brown shoes sold in June = 800 * 7/16 = 350

Number of grey shoes sold in June = 800 – 350 = 450

Total number of shoes sold in July = 350 * 2.5 = 875

Shop B:

Total number of shoes sold in June = 80 * 11/1 = 880

Number of brown shoes sold in June = 880 * 5/11 = 400

Number of grey shoes sold in June = 880 – 400 = 480

Total number of shoes sold in July = 880 – 80 = 800

Shop C:

Total number of shoes sold in June = 60 * 13/1 = 780

Number of brown shoes sold in June = 780 * 6/13 = 360

Number of grey shoes sold in June = 780 – 360 = 420

Total number of shoes sold in July = 780 * 1/3 * 3.5 = 260 * 3.5 = 910

Shop D:

Total number of shoes sold in June = 150 * 12/2 = 900

Number of brown shoes sold in June = 900 * 7/12 = 525

Number of grey shoes sold in June = 900 – 525 = 375

Total number of shoes sold in July = 375 + 375 * 120/100 = 825

Shop	June			Total number of shoes sold in July
	Total number of shoes sold	Number of brown shoes sold	Number of grey shoes sold	
A	800	350	450	875
B	880	400	480	800
C	780	360	420	910
D	900	525	375	825

Answer: B

Required ratio = 900:400 = 9:4

31) The number of brown shoes sold in June in shop C is what percentage of the total number of shoes sold in July in shop B?

A.45%

B.40%

C.50%

D.42%

E.None of these

Explanation

Shop A:

Total number of shoes sold in June = 100 * 16/2 = 800

Number of brown shoes sold in June = 800 * 7/16 = 350

Number of grey shoes sold in June = 800 – 350 = 450

Total number of shoes sold in July = 350 * 2.5 = 875

Shop B:

Total number of shoes sold in June = 80 * 11/1 = 880

Number of brown shoes sold in June = 880 * 5/11 = 400

Number of grey shoes sold in June = 880 – 400 = 480

Total number of shoes sold in July = 880 – 80 = 800

Shop C:

Total number of shoes sold in June = 60 * 13/1 = 780

Number of brown shoes sold in June = 780 * 6/13 = 360

Number of grey shoes sold in June = 780 – 360 = 420

Total number of shoes sold in July = 780 * 1/3 * 3.5 = 260 * 3.5 = 910

Shop D:

Total number of shoes sold in June = 150 * 12/2 = 900

Number of brown shoes sold in June = 900 * 7/12 = 525

Number of grey shoes sold in June = 900 – 525 = 375

Total number of shoes sold in July = 375 + 375 * 120/100 = 825

Shop	June			Total number of shoes sold in July
	Total number of shoes sold	Number of brown shoes sold	Number of grey shoes sold	
A	800	350	450	875
B	880	400	480	800
C	780	360	420	910
D	900	525	375	825

Answer: A

Required percentage = 360/800 * 100 = 45%

Direction (32-33): Following questions have two quantities as Quantity I and Quantity II. You have to determine the relationship between them and give an answer as,

32) Quantity I: A box contains x blue balls, (x+10) green balls and 7 red balls and the probability of selecting a green ball is 8/15. Find the total number of balls in the box?

Quantity II: The ratio of the total number of balls in bag A to bag B is 5:3. If 8 balls are added to each bag, then the ratio of the total number of balls in box A to box B is 3:2. Find the total number of balls in bag A initially?

A.Quantity I > Quantity II

B.Quantity I ≥ Quantity II

C.Quantity II > Quantity I

D.Quantity II ≥ Quantity I

E.Quantity I = Quantity II or Relation cannot be established

Explanation

Answer: A

From quantity I,

The total number of balls in the box = x + x + 10 + 7 = 2x + 17

$(x + 10)C_1/(2x + 17)C_1 = 8/15$

15x + 150 = 16x + 136

x = 14

The total number of balls in the box = 2 * 14 + 17 = 28 + 17 = 45

From quantity II,

Let the total number of balls in bag A = 5x

And the total number of balls in bag B = 3x

(5x + 8)/(3x + 8) = 3/2

10x + 16 = 9x + 24

x = 8

The total number of balls in bag A initially = 8 * 5 = 40

Quantity I > Quantity II

33) Quantity I: The ratio of the cost price to the marked price of the book is 2:3 and the cost price of the book is Rs.1440. If the shopkeeper allows the discount of 25%, then find the profit percentage?

Quantity II: 15%

A.Quantity I > Quantity II

B.Quantity I ≥ Quantity II

C.Quantity II > Quantity I

D.Quantity II ≥ Quantity I

E.Quantity I = Quantity II or Relation cannot be established

Explanation

Answer: C

From quantity I,

The cost price of the book = Rs.1440

The marked price of the book = 1440 * 3/2 = Rs.2160

The selling price of the book = 2160 * 75/100 = Rs.1620

The profit percentage = (1620 – 1440)/1440 * 100 = 180/1440 * 100 = 12.5%

From quantity II,

15%

Quantity II > Quantity I

Direction (34-37): Read the following information carefully and answer the questions.

Two types of purses namely Linen and cotton purses are manufactured in a factory in four different years 2014, 2015, 2016 and 2017. The ratio of the total number of purses manufactured in 2015 to the total number of cotton purses manufactured in 2016 and 2017 together is 8:9 and the total number of purses manufactured in 2017 is 20% more than that of 2015 and the average number of cotton purses manufactured in 2014 and 2015 is 430. The number of linen purses manufactured in 2014 is 480 and the number of linen purses manufactured in 2014 is 130 more than the number of cotton purses manufactured in 2016. The total number of purses manufactured in 2014 is 900 and the total number of purses manufactured in 2014 is 60 less than the total number of purses manufactured in 2017. The total number of purses manufactured in 2016 is 190 more than the number of cotton purses manufactured in 2017.

34) Find the ratio of the number of linen purses manufactured in 2016 to the number of cotton purses manufactured in 2014.

A.9:8

B.13:14

C.15:11

D.11:12

E.None of these

Explanation

Total number of purses manufactured in 2014 = 900

Number of linen purses manufactured in 2014 = 480

Number of cotton purses manufactured in 2014 = 900 – 480 = 420

Total number of purses manufactured in 2017 = 900 + 60 = 960

Total number of purses manufactured in 2015 = 960 * 100/120 = 800

Total number of cotton purses manufactured in 2016 and 2017 = 800 * 9/8 = 900

Number of cotton purses manufactured in 2015 = 430 * 2 – 420 = 860 – 420 = 440

Number of linen purses manufactured in 2015 = 800 – 440 = 360

Number of cotton purses manufactured in 2016 = 480 – 130 = 350

Number of cotton purses manufactured in 2017 = 900 – 350 = 550

Number of linen purses manufactured in 2017 = 960 – 550 = 410

Total number of purses manufactured in 2016 = 550 + 190 = 740

Number of linen purses manufactured in 2016 = 740 – 350 = 390

Year	Total number of purses manufactured	Number of linen purses manufactured	Number of cotton purses manufactured
2014	900	480	420
2015	800	360	440
2016	740	390	350
2017	960	410	550

Answer: B

Required ratio = 390:420 = 13:14

35) The number of cotton purses manufactured in 2015 and 2016 together is how much more/less than the total number of purses manufactured in 2015.

A.8 more

B.15 less

C.20 less

D.10 less

E.None of these

Explanation

Total number of purses manufactured in 2014 = 900

Number of linen purses manufactured in 2014 = 480

Number of cotton purses manufactured in 2014 = 900 – 480 = 420

Total number of purses manufactured in 2017 = 900 + 60 = 960

Total number of purses manufactured in 2015 = 960 * 100/120 = 800

Total number of cotton purses manufactured in 2016 and 2017 = 800 * 9/8 = 900

Number of cotton purses manufactured in 2015 = 430 * 2 – 420 = 860 – 420 = 440

Number of linen purses manufactured in 2015 = 800 – 440 = 360

Number of cotton purses manufactured in 2016 = 480 – 130 = 350

Number of cotton purses manufactured in 2017 = 900 – 350 = 550

Number of linen purses manufactured in 2017 = 960 – 550 = 410

Total number of purses manufactured in 2016 = 550 + 190 = 740

Number of linen purses manufactured in 2016 = 740 – 350 = 390

Year	Total number of purses manufactured	Number of linen purses manufactured	Number of cotton purses manufactured
2014	900	480	420
2015	800	360	440
2016	740	390	350
2017	960	410	550

Answer: D

Required difference = 800 – (440 + 350) = 800 – 790 = 10 less

36) Find the average number of linen purses manufactured in 2014, 2015 and 2016.

A.410

B.350

C.420

D.380

E.None of these

Explanation

Total number of purses manufactured in 2014 = 900

Number of linen purses manufactured in 2014 = 480

Number of cotton purses manufactured in 2014 = 900 – 480 = 420

Total number of purses manufactured in 2017 = 900 + 60 = 960

Total number of purses manufactured in 2015 = 960 * 100/120 = 800

Total number of cotton purses manufactured in 2016 and 2017 = 800 * 9/8 = 900

Number of cotton purses manufactured in 2015 = 430 * 2 – 420 = 860 – 420 = 440

Number of linen purses manufactured in 2015 = 800 – 440 = 360

Number of cotton purses manufactured in 2016 = 480 – 130 = 350

Number of cotton purses manufactured in 2017 = 900 – 350 = 550

Number of linen purses manufactured in 2017 = 960 – 550 = 410

Total number of purses manufactured in 2016 = 550 + 190 = 740

Number of linen purses manufactured in 2016 = 740 – 350 = 390

Year	Total number of purses manufactured	Number of linen purses manufactured	Number of cotton purses manufactured
2014	900	480	420
2015	800	360	440
2016	740	390	350
2017	960	410	550

Answer: A

Required average = (480 + 360 + 390)/3 = 1230/3 = 410

37) If the number of linen purses manufactured in 2018 is 20% more than that of 2014 and the number of cotton purses manufactured in 2018 is the average of the number of cotton purses manufactured in 2015 and 2016, then find the total number of purses manufactured in 2018.

A.991

B.942

C.965

D.971

E.None of these

Explanation

Total number of purses manufactured in 2014 = 900

Number of linen purses manufactured in 2014 = 480

Number of cotton purses manufactured in 2014 = 900 – 480 = 420

Total number of purses manufactured in 2017 = 900 + 60 = 960

Total number of purses manufactured in 2015 = 960 * 100/120 = 800

Total number of cotton purses manufactured in 2016 and 2017 = 800 * 9/8 = 900

Number of cotton purses manufactured in 2015 = 430 * 2 – 420 = 860 – 420 = 440

Number of linen purses manufactured in 2015 = 800 – 440 = 360

Number of cotton purses manufactured in 2016 = 480 – 130 = 350

Number of cotton purses manufactured in 2017 = 900 – 350 = 550

Number of linen purses manufactured in 2017 = 960 – 550 = 410

Total number of purses manufactured in 2016 = 550 + 190 = 740

Number of linen purses manufactured in 2016 = 740 – 350 = 390

Year	Total number of purses manufactured	Number of linen purses manufactured	Number of cotton purses manufactured
2014	900	480	420
2015	800	360	440
2016	740	390	350
2017	960	410	550

Answer: D

Number of linen purses manufactured in 2018 = 480 * 120/100 = 576

Number of cotton purses manufactured in 2018 = (440 + 350)/2 = 395

Total number of purses manufactured in 2018 = 576 + 395 = 971

Direction (38-40): What approximate value should come in the place of (?) in the following questions?

38) (149.94/3.01) + 3.07 × 4.02 = ? + (136.07/8.02) – 24.95

A.50

B.90

C.60

D.80

E.None of these

Explanation

Answer: E

? = (150/3) + 3 × 4 – (136/8) + 25

= 50 + 12 – 17 + 25

= 70

39) (19.98% of 1499.98 – 14.8 * 7.99) ÷ 2.78 = ?

A.60

B.50

C.70

D.80

E.90

Explanation

Answer: A

(19.98% of 1499.98 – 14.8 * 7.99) ÷ 2.78 = ?

(20 * 1500/100 – 15 * 8) ÷ 3

(300 – 120) ÷ 3 = ?

180 ÷ 3 = ?

? = 60

40) 62.78 ÷ √50 *243.12 ÷ 26.89 * 81.02 = 2.99$^{?}$

A.3

B.5

C.8

D.2

E.7

Explanation

Answer: C

62.78 ÷ √50 * 243.12 ÷ 26.89 * 81.02 = $2.99^{?}$

63 ÷ √49 * 243 ÷ 27 * 81 = $3^{?}$

63 ÷ 7 * 3^5÷ 3^3 * 3^4 = $3^{?}$

9 * 3^2 * 3^4 = $3^{?}$

$3^{?}$ = $3^{(2+2+4)}$

$3^{?}$ = 3^8

? = 8