1. Questions

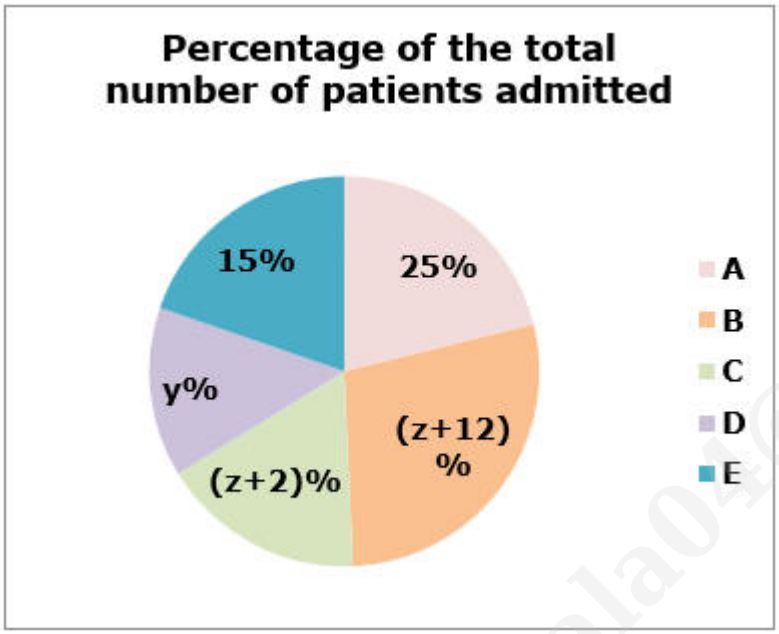
Study the following information carefully and answer the questions.

The given pie chart shows the percentage of the total number of patients admitted (curable + incurable) in five different hospitals namely i.e, A, B, C, D and E respectively.

Note:

i). The value of Z is equal to the cube of the number which is the smallest prime number.

ii). The total number of patients admitted in hospital E = 450.



The given table shows the percentage of number of incurable patients admitted in five different hospitals namely A, B, C, D and E respectively.

Hospitals	Percentage of number of incurable patients admitted
A	40%
B	55%
C	60%
D	48%
E	50%

The total number of patients admitted in hospital F is (z+22)% less than that in hospital D. The ratio of the number of incurable patients admitted in hospital A to F is 5:z. Then find the number of curable patients admitted to Hospital F.

a. 180

b. 150

c. 200

d. 170

e. 155

2. Questions

In hospital B, the number of male curable patients admitted is twice that of incurable patients. The ratio of the number of female incurable to curable patients admitted is 29:19, Then find the difference between the number of female incurable patients admitted and the number of male curable patients admitted.

a. 180

b. 160

c. 210

d. 190

e. 170

3. Questions

In hospital E, 1/5th and 40% of the people suffered from type P and type Q diseases, respectively, and the rest suffered from type R diseases, Then find the ratio between the number of people who suffered type P and type Q diseases together to the number of people who suffered type R.

a. 2:3

b. 3:2

c. 4:5

d. 7:6

e. 2:1

4. Questions

Find the sum of the number of incurable patients admitted in hospital D and the number of curable patients admitted in hospital C.

a. 452

b. 552

c. 389

d. 457

e. 340

5. Questions

Find the total number of curable patients admitted in hospital A is what percentage more or less

than the number of incurable patients admitted in hospital B.

a. 36.36% more

b. 16.66% less

c. 19.76% more

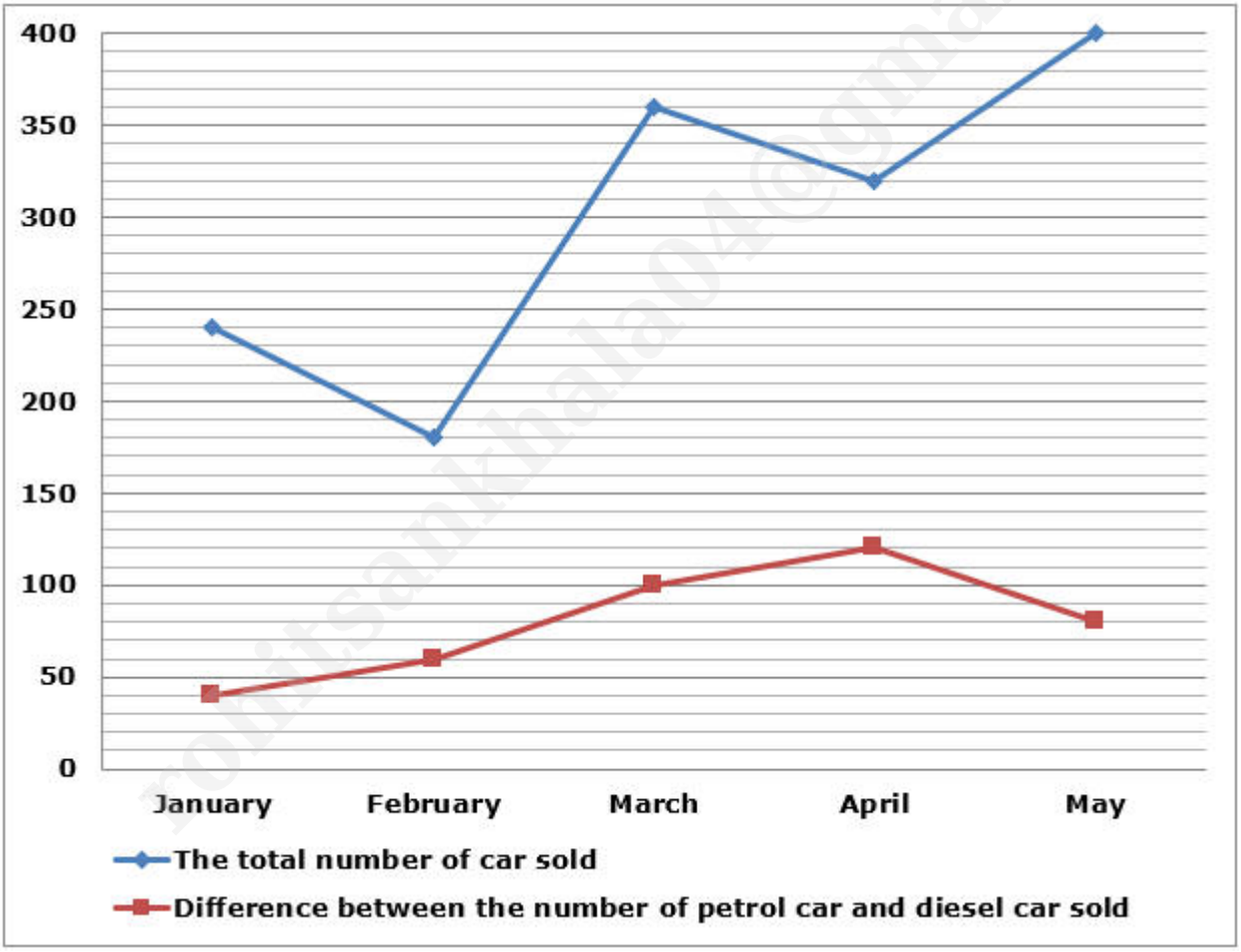
d. 34.65% less

e. 27% more

6. Questions

Study the following information carefully and answer the questions.

The given line graph shows the total number of cars sold (petrol car + diesel car) and the difference between the number of petrol cars and diesel cars sold in five different months likely i.e., January, February, March, April and May respectively.



Note: The number of petrol cars sold in each month is more than the number of diesel cars sold.

In April, out of the total number of cars manufactured, 80% of the cars were sold, and the rest were unsold. If the number of petrol cars unsold is 1/8th of the number of petrol cars sold in May, then find the number of diesel cars unsold in April.

a. 50

b. 60

c. 30

d. 80

e. 20

7. Questions

The number of petrol cars sold in June is 20% more than the number of diesel cars sold in February, and the ratio of petrol cars to diesel cars sold in June is 3:5,then the total number of diesel cars sold in June is what percentage of total number of diesel cars sold in April?

a. 130

b. 180

c. 170

d. 120

e. 110

8. Questions

The number of electric cars sold in January is (x+2)% more than the number of petrol cars sold in April. The total number of electric and diesel cars sold in January was 364, Then find the value of x.

a. 22

b. 18

c. 15

d. 19

e. 21

9. Questions

Find the ratio between the number of diesel cars sold in May to the number of petrol cars sold in March.

a. 16: 23

b. 23: 12

c. 18: 17

d. 21: 17

e. 22: 15

10. Questions

Find the average number of diesel cars sold in all months together.

a. 160
b. 110
c. 123
d. 134
e. 173

11. Questions

The 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 an answer as,

The present age of A, B and C are in the ratio 5:6:7. Find the difference between the present age of A and C.

Statement I: Five years ago, C's age was 20% more than that of B.

Statement II: The average present age of A and B is 5 less than the average present age of B and C.

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

12. Questions

A travelled a total distance of d km. Find the value of d.

Statement I: If A travelled half of the distance at 45 km/hr and for the remaining half of the distance, he increased his speed by x%, then A would have taken a total of 180 minutes for the journey.

Statement II: If A travelled the entire distance at 72 km/hr, he would have taken 1 hour more than the time taken by him to travel (d + 40) km at a speed of 100 km/hr.

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

13. Questions

Find the cost price of article A.

Statement I: If article A is marked 44% above its cost price and sold after a discount of Rs. y, then the article would be sold at a profit of 28%.

Statement II: If article A is marked 32% above its cost price and sold after successive discounts of Rs. y and Rs. 60 respectively then the article would be sold at a profit of z%.

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

14. Questions

A and B together can do some work in 9.6 days. Find the time taken by A to finish the work alone.

Statement I: If A and B work on alternate days starting with A, then the work would be finished in 19 days.

Statement II: B and C together can complete the given work in 8.8 days.

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

15. Questions

There are two mixtures A and B, each of them contains both milk and water. The quantity of milk and water in mixture B is more than that of mixture in A. The ratio of Milk and water in mixture A is 3:5. Find the total quantity of mixture B.

Statement I: The total quantity of mixture B is 110 litres more than that of mixture A.

Statement II: The total quantity of water in mixture B is 100 litres more than that of A.

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

16. Questions

Karthick invested some amount in two schemes A and B, in the ratio of 3:4, respectively, for 3 years and 2 years respectively. Scheme A offers a simple interest rate of 12.5% per annum, and Scheme B offers a compound interest rate of 10% per annum. If the interest received from scheme A is Rs. 1710 more than that of scheme B, Then find the sum invested by A.

a. Rs. 18000

b. Rs. 24000

c. Rs. 25000

d. Rs. 12000

e. Rs. 18900

17. Questions

Avi and Sofi started a business by investing Rs. 30000 and Rs. 24000, respectively. After 6 months, Avi left the business, and after 2 more months, Somu joined Sofi by investing Rs. 12,000. If the total annual profit share is Rs. 25800, then find the profit share of Avi.

a. Rs. 14400

b. Rs. 2400

c. Rs. 9000

d. Rs. 6500

e. Rs. 11000

18. Questions

Two vessels A and B contain juice and water. In vessel A, the ratio of juice quantity to water is 5:3, and in vessel B, the quantity of juice is 40% more than that of water. 40 litres of the mixture are taken out of vessel A and mixed in vessel B, and the ratio becomes 47:33, Then find the initial quantity of juice in vessel A. The water in both vessels is the same.

a. 165 litres

b. 160 litres

c. 250 litres

d. 150 litres

e. 200 litres

19. Questions

The present age of B is 150% of the present age of A. 5 years hence, the ratio of age of A to B is 9:13. The present age of C is 20% less than the present age of D. If B and D are twins, then find the present age of the average age of A, B, C, and D.

a. 59 years

b. 52 years

c. 34 years

d. 45 years

e. 27 years

20. Questions

A shopkeeper bought an article and marked it 60% above the cost price, and then sold it after giving a discount of 20%. Had he bought it for Rs. 500 less and sold it for Rs. 400 more, then he would have made a profit of Rs. 6500. Then find the original cost of the article.

a. Rs. 18000

b. Rs. 20000

c. Rs. 16500

d. Rs. 21000

e. Rs. 25000

21. Questions

A boat can travel 360 km downstream in 10 hours less than the time taken by it to cover 180 km in upstream. If the speed of the boat in still water is 12 km/hr and the speed of the current is x km/hr, then find the time taken by the boat to cover 240 km in upstream.

a. 42 hours

b. 40 hours

c. 36 hours

d. 19 hours

e. 25 hours

22. Questions

A and B together can complete a work in 18 days. B and C to complete the work in 12 days. If A and C together can complete the work in 12 days, then find the time taken by C alone to complete the work.

a. 15 days

b. 12 days

c. 9 days

d. 18 days

e. 17 days

23. Questions

A hollow metallic sphere of outer diameter 20 cm is cut into two equal hemispheres. The total surface area of one of the hemispheres is 1092 cm^2. Then find the value of the inner radius. (Take π = 3)

a. 7

b. 5

c. 9

d. 8

e. 12

24. Questions

Train A crosses 210m platform in 54 seconds and Train B crosses 400m bridge in 52 seconds. The length of train A and train B is 438m and 640m respectively and the time taken by train B to cross train A while running in the same direction is x seconds. Then find the value of (x + 5.25).

a. 132

b. 140

c. 180

d. 240

e. 134

25. Questions

The sum of three numbers is 90, the difference between the first and second ($1^{st} > 2^{nd}$) numbers is 6 and the ratio between the second and third numbers is 5:4. Then find the first number.

a. 15

b. 26

c. 44

d. 36

e. 24

26. Questions

What approximate value should come in the place of (?) in the following questions.

√195.98 + 24.99% of 395.96 = ? – 0.99

a. 114

b. 119

c. 112

d. 107

e. 98

27. Questions

19.99% of 550.01 + 12.01^2 = 1.99 * ?

a. 129

b. 144

c. 127

d. 119

e. 120

28. Questions

14.99 of (2.98/4.97) of 15^2 = $?^2$

a. 55

b. 45

c. 35

d. 67

e. 86

29. Questions

$?^2$ – 96.01 – 14.89 = 145.01

a. 18

b. 21

c. 13

d. 16

e. 22

30. Questions

$44.99 + 85.01 = ? * 14.97 + 4.99^2$

a. 7

b. 9

c. 5

d. 11

e. 13

31. Questions

Find out the wrong number in the following number series.

112, 129, 98, 146, 78

a. 98

b. 78

c. 146

d. 129

e. 112

32. Questions

5, 8, 21, 80, 397

a. 80

b. 21

c. 397

d. 5

e. 8

33. Questions

87, 103, 141, 203, 303

a. 203

b. 141

c. 303

d. 87

e. 103

34. Questions

56, 134, 182, 306, 380

a. 182

b. 380

c. 56

d. 134

e. 306

35. Questions

8, 12, 24, 120, 840

a. 24

b. 120

c. 12

d. 840

e. 8

36. Questions

The following question contains two equations as I and II. You have to solve both equations and determine the relationship between them and give an answer as,

i). $x^2+12x=-27$

ii). $y^2+3y-108=0$

a. $x > y$

b. $x \geq y$

c. x = y or relationship can't be determined

d. $x < y$

e. $x \leq y$

37. Questions

i). $2x^2 - 11x + 12 = 0$

ii). $y^2 - 19y + 90 = 0$

a. $x > y$

b. $x \geq y$

c. x = y or relationship can't be determined

d. x < y

e. x ≤ y

38. Questions

i). $x^2-6x-187=0$

ii). $y^2+34y+273=0$

a. x > y

b. x ≥ y

c. x = y or relationship can't be determined

d. x < y

e. x ≤ y

39. Questions

i). $5x^2+2x-24=0$

ii). $y^2+21y+54=0$

a. x > y

b. x ≥ y

c. x = y or relationship can't be determined

d. x < y

e. x ≤ y

40. Questions

i). $x^2 + 24x + 128 = 0$

ii). $15y + 216 = 396$

a. x > y

b. x ≥ y

c. x = y or relationship can't be determined

d. x ≤ y

Explanations:

1. Questions

The value of z = 2^3 = 8

25 + 20 + 10 + y + 15 = 100

y = 100 – 70

y = 30

The total number of patients admitted in hospital E = 450

The total number of patients admitted in all hospitals

= 450 * (100/15) = 3000

The total number of patients admitted in hospital A

= 3000 * (25/100) = 750

The number of incurable patients admitted in hospital A

= 750 * (40/100) = 300

The number of curable patients admitted in hospital A = 750 – 300 = 450

Similarly,

Hospital	The total number of patients admitted	The number of incurable patients admitted	The number of curable patients admitted
A	750	300	450
B	600	330	270
C	300	180	120
D	900	432	468
E	450	225	225

Answer: B

The total number of patients admitted in hospital F = 900 * 70/100 = 630

The number of incurable patients admitted in hospital F = 300 * 8/5 = 480

The number of curable patients admitted in hospital F = 630 – 480 = 150

Hence option B.

2. Questions

The value of z = 2^3 = 8

25 + 20 + 10 + y + 15 = 100

y = 100 – 70

y = 30

The total number of patients admitted in hospital E = 450

The total number of patients admitted in all hospitals

= 450 * (100/15) = 3000

The total number of patients admitted in hospital A

= 3000 * (25/100) = 750

The number of incurable patients admitted in hospital A

= 750 * (40/100) = 300

The number of curable patients admitted in hospital A = 750 – 300 = 450

Similarly,

Hospital	The total number of patients admitted	The number of incurable patients admitted	The number of curable patients admitted
A	750	300	450
B	600	330	270
C	300	180	120
D	900	432	468
E	450	225	225

Answer: C

Let, the number of males = x

The number of females = y

x + 29y = 330 --->(1)

2x + 19y = 270 --->(2)

By solving equation (1) and (2), we get

x = 40, y = 10

The number of female incurable patients admitted in hospital B

= 29 * 10 = 290

The number of male curable patients admitted in hospital B = 80

Required difference = (290 – 80) = 210

Hence option C

3. Questions

The value of $z = 2^3 = 8$

$25 + 20 + 10 + y + 15 = 100$

$y = 100 - 70$

$y = 30$

The total number of patients admitted in hospital E = 450

The total number of patients admitted in all hospitals

= 450 * (100/15) = 3000

The total number of patients admitted in hospital A

= 3000 * (25/100) = 750

The number of incurable patients admitted in hospital A

= 750 * (40/100) = 300

The number of curable patients admitted in hospital A = 750 – 300 = 450

Similarly,

Hospital	The total number of patients admitted	The number of incurable patients admitted	The number of curable patients admitted
A	750	300	450
B	600	330	270
C	300	180	120
D	900	432	468
E	450	225	225

Answer: B

The total number of people who admitted from hospital E = 450

The number of people who suffered from type P diseases in hospital E = 450 * 1/5 = 90

The number of people who suffered from type Q disease in hospital E = 450 * 40/100 = 180

The number of people who suffered from type R diseases in hospital E = 450 – 270 = 180

Required ratio = 270: 180 = 3:2

Hence option B

4. Questions

The value of $z = 2^3 = 8$

$25 + 20 + 10 + y + 15 = 100$

$y = 100 - 70$

$y = 30$

The total number of patients admitted in hospital E = 450

The total number of patients admitted in all hospitals

= 450 * (100/15) = 3000

The total number of patients admitted in hospital A

= 3000 * (25/100) = 750

The number of incurable patients admitted in hospital A

= 750 * (40/100) = 300

The number of curable patients admitted in hospital A = 750 – 300 = 450

Similarly,

Hospital	The total number of patients admitted	The number of incurable patients admitted	The number of curable patients admitted
A	750	300	450
B	600	330	270
C	300	180	120
D	900	432	468
E	450	225	225

Answer: B

The number of incurable patients admitted in hospital D = 432

The number of curable patients admitted in hospital C = 120

Required sum = (432 + 120) = 552

Hence option B

5. Questions

The value of $z = 2^3 = 8$

$25 + 20 + 10 + y + 15 = 100$

$y = 100 - 70$

y = 30

The total number of patients admitted in hospital E = 450

The total number of patients admitted in all hospitals

= 450 * (100/15) = 3000

The total number of patients admitted in hospital A

= 3000 * (25/100) = 750

The number of incurable patients admitted in hospital A

= 750 * (40/100) = 300

The number of curable patients admitted in hospital A = 750 – 300 = 450

Similarly,

Hospital	The total number of patients admitted	The number of incurable patients admitted	The number of curable patients admitted
A	750	300	450
B	600	330	270
C	300	180	120
D	900	432	468
E	450	225	225

Answer: A

The number of curable patients admitted in hospital A = 450

The number of incurable patients admitted in hospital B = 330

Required percentage = (450 – 330)/330 = 36.36% more

Hence option A.

6. Questions

The total number of cars sold in January = 240

Petrol cars + Diesel cars = 240 --->(1)

Petrol cars – Diesel cars = 40 ---->(2)

By solving, equations (1) and (2), we get

The number of petrol cars sold in January = 140

The number of diesel cars sold in January = 100

Similarly,

Month	The total number of cars sold	The number of petrol cars sold	The number of diesel cars sold
January	240	140	100
February	180	120	60
March	360	230	130
April	320	220	100
May	400	240	160

Answer: A

The total number of cars manufactured in April = 320 * 100/80 = 400

The total number of cars unsold in April = 400 – 320 = 80

The number of petrol cars unsold in April = 240/8 = 30

The number of diesel cars unsold in April = 80 – 30 = 50

Hence option A.

7. Questions

The total number of cars sold in January = 240

Petrol cars + Diesel cars = 240 --->(1)

Petrol cars – Diesel cars = 40 ---->(2)

By solving, equations (1) and (2), we get

The number of petrol cars sold in January = 140

The number of diesel cars sold in January = 100

Similarly,

Month	The total number of cars sold	The number of petrol cars sold	The number of diesel cars sold
January	240	140	100
February	180	120	60
March	360	230	130
April	320	220	100
May	400	240	160

Answer: D

The number of petrol cars sold in June = 60 * 120/100 = 72

The number of diesel cars sold in June = 72 * 5/3 = 120

Required percentage = (120/100)*100 = 120

Hence option D.

8. Questions

The total number of cars sold in January = 240

Petrol cars + Diesel cars = 240 --->(1)

Petrol cars – Diesel cars = 40 ---->(2)

By solving, equations (1) and (2), we get

The number of petrol cars sold in January = 140

The number of diesel cars sold in January = 100

Similarly,

Month	The total number of cars sold	The number of petrol cars sold	The number of diesel cars sold
January	240	140	100
February	180	120	60
March	360	230	130
April	320	220	100
May	400	240	160

Answer: B

The total number of electric and petrol cars sold in January = 364

The number of electric cars sold in January = 364 – 100 = 264

264 = 220 * (100 + x+ 2)/100

26400 = 220 (102 + x)

120 = 102 + x

x = 18

Hence option B

9. Questions

The total number of cars sold in January = 240

Petrol cars + Diesel cars = 240 --->(1)

Petrol cars – Diesel cars = 40 ---->(2)

By solving, equations (1) and (2), we get

The number of petrol cars sold in January = 140

The number of diesel cars sold in January = 100

Similarly,

Month	The total number of cars sold	The number of petrol cars sold	The number of diesel cars sold
January	240	140	100
February	180	120	60
March	360	230	130
April	320	220	100
May	400	240	160

Answer: A

The number of diesel cars sold in May = 160

The number of petrol cars sold in March = 230

Required ratio = 160: 230 = 16: 23

Hence option A.

10. Questions

The total number of cars sold in January = 240

Petrol cars + Diesel cars = 240 --->(1)

Petrol cars – Diesel cars = 40 ---->(2)

By solving, equations (1) and (2), we get

The number of petrol cars sold in January = 140

The number of diesel cars sold in January = 100

Similarly,

Month	The total number of cars sold	The number of petrol cars sold	The number of diesel cars sold
January	240	140	100
February	180	120	60
March	360	230	130
April	320	220	100
May	400	240	160

Answer: B

The total number of diesel cars manufactured in all months together

= (100 + 60 + 130 + 100 + 160) = 550/5 = 110

Hence option B.

11. Questions

Answer: C

Let, the present age of A, B and C be 5x, 6x and 7x respectively.

Statement I:

7x – 5 = 120/100 * (6x – 5)

7x – 5 = 1.2 * (6x – 5)

7x – 5 = 7.2x – 6

x = 5

Required difference = 7x – 5x = 2 * 5 = 10 years

Data in statement I alone is sufficient to answer the question,

Statement II:

((6x + 5x)/2) + 5 = ((6x + 7x)/2

5.5x + 5 = 6.5x

x = 5

Required difference = 2x = 2 * 5 = 10 years

Data in statement II alone is sufficient to answer the question.

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

Hence option C.

12. Questions

Answer: B

Statement I:

Let, d = 2D

The increased speed = 45 * (100+x)/100

(D/45) + (D/0.45(100+x) = 180/60

Data in statement I alone is not sufficient to answer the question.

Statement II:

(d/72) = 1 + (40+d)/100

100d = 72 * (140 + d)

100d = 10080 + 72d

28d = 10080

d = 360

Data in statement II alone is sufficient to answer the question.

Hence option B.

13. Questions

Answer: D

Statement I:

Let, the cost price of the article A = 100x

100x * 1.44 – y = 100x * 1.28

144x – y = 128x

y = 16x

Data in statement I alone is not sufficient to answer the question.

Statement II:

Let, the cost price of article A = Rs. 100x

100x * 1.32 – y – 60 = 100x * (100+z)/100

Data in statement II alone is not sufficient to answer the question.

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

Hence option D

14. Questions

Answer: A

Let,the total work = 96 units

The combined efficiency of A and B = 96/9.6 = 10 units/day

Statement I:

The work done by A and B together in 18 days = 18/2 * 10 = 90 units

work done by A on last day = 96 – 90 = 6 units

Time taken by A to finish the work alone = 96/6 = 16 days

Data in statement I alone is sufficient to answer the question.

Statement II:

Combined efficiency of B and C together = 96/8.8 =10.9 units

Data in statement II alone is not sufficient to answer the question.

Hence option A.

15. Questions

Answer: D

Statement I: The quantity of water in mixture B = (8x + 110) litres

Data in statement I alone is not sufficient to answer the question.

Statement II:

The quantity of water in mixture B = (5x + 100) litres

Data in statement II alone is not sufficient to answer the question.

By combining both statements, both statements are not sufficient to answer the question.

Hence option D.

16. Questions

Answer: A

According to the question,

Let, the sum invested by Karthick in scheme A = Rs.3x

The sum invested by Karthick in scheme B = Rs. 4x

(3x * 3 * 12.5/100) – (4x * 1.1 * 1.1 – 4x) = 1710

1.125x – 0.84x = 1710

0.285x = 1710

x = 6000

The sum invested by Karthick in scheme A = 3 * 6000 = Rs. 18000

Hence option A.

17. Questions

Answer: C

According to the question,

The ratio of profit share of Avi, Sofi and Somu

= ((30000 * 6): (24000 * 12): (12000 * 4))

= 180: 288: 48

= 15: 24: 4

The total annual profit share = Rs. 25800

The profit share of Avi = 25800 * 15/43 = Rs. 9000

18. Questions

Answer: C

According to question,

The quantity of juice in vessel A= 5x

The quantity of water in vessel A = 3x

The quantity of juice in vessel B= 7y

The quantity of water in vessel B = 5y

From vessel A, 60 lt is added to vessel B

(7y+25)/(5y+15) = 47/33

231y+825 = 235y+ 705

4y=120

y=30

The quantity of water in vessel B = 5 * 30 = 150 litres

The quantity of juice in vessel A = 150 * 5/3 = 250 litres

19. Questions

Answer: B

Let, the present age of A = 2x

The present age of B = 3x

(2x-5)/(3x-5) = 9/13

26x – 65=27x-45

x =20

The present age of A = 2 * 20 = 40 years

The present age of B = 3 * 20 = 60 years

B and D are twins

The present age of D = 60 years

The present age of C = 60* 80/100 = 48 years

Required average = (40 + 60 + 60 + 48)/4 = 208/4 = 52 years

Hence option B

20. Questions

Answer: B

According to the question,

Let, the cost price of the article = 100x

The marked price of the article = 100x * 160/100 = Rs. 160x

The selling price of the article = 160x * 80/100 = Rs. 128x

(128x + 400) – (100x – 500) = 6500

128x – 100x + 900 = 6500

28x = 5600

x = 200

The cost price of the article = 100 * 200 = Rs. 20000

Hence option B.

21. Questions

Answer: B

According to the question,

180/(12-x) – (360/(12 + x) = 10

18/(12 – x) – 36/(12 + x) = 1

18(12 + x) – 36(12 – x) = (12 –x) (12 + x)

$216 + 18x – 432 + 36x = 144 – x^2$

$-216 + 54x = 144 – x^2$

$-360 + 54x = -x^2$

$x^2 + 54x – 360 = 0$

x = -60, 6

x = 6

The upstream speed = 12 – 6 = 6 km/hr

Time taken = 240/6 = 40 hours

Hence option B

22. Questions

Answer: D

According to the question,

Let, the total work = 36x units

The efficiency of A and B together = 36x/18 = 2x units/day

The efficiency of B and C = 36x/12x = 3 units/day

The efficiency of A and C = 36x/12x = 3 units/day

Efficiency of C = (2+3+3)/2 – 2 = 2 units/day

The time taken by Calone to complete the work = 36x/2 = 18 days

Hence option D

23. Questions

Answer: D

According to the question,

Let, the inner radius = r cm

The outer radius = R cm

R = 20/2 = 10 cm

The total surface area = $3\pi R^2 + \pi r^2$

$1092 = \pi(3R^2 + r^2)$

$1092 = 3 * (3 * 100 + r^2)$

$364 = 300 + r^2$

r = 8 cm

Hence option D

24. Questions

Answer: B

According to the question,

The speed of the train A = (210 + 438)/54 = 12 m/sec

The speed of the train B = (400 + 640)/52 = 20 m/sec

Time taken by train B to cross the train A = (438 + 640)/8 = 134.75 seconds

Required value = (134.75 + 5.25) = 140

Hence option B

25. Questions

Answer: D

Let, the three numbers be,

First number = a

Second number = b

Third number = c

a +b+c = 90

a – b = 6

b = 5x, c = 4x

a = 6 + 5x

(6 + 5x) + 5x + 4x = 90

6 + 14x = 90

14x = 84

x = 6

The first number = 6 + 30 = 36

Hence option D.

26. Questions

Answer: A

√195.98 + 24.99% of 395.96 = ? – 0.99

√196 + (25/100) of 396 =? – 1

14 + 99 + 1 = ?

? = 114

Hence option A.

27. Questions

Answer: C

19.99% of 550.01 + 12.01^2 = 1.99 * ?

(20/100) of 550 + 12^2 =? * 2

110 + 144 = 2 * ?

? = 254/2

? = 127

Hence option C

28. Questions

Answer: B

14.99 of (2.98/4.97) of 15^2 = $?^2$

15 of (3/5) * 225 = $?^2$

$?^2$ = 2025

? = 45

Hence option B

29. Questions

Answer: D

$?^2 - 96.01 - 14.89 = 145.01$

$?^2 - 96 - 15 = 145$

$?^2 = 256$

? = 16

Hence option D

30. Questions

Answer: A

$44.99 + 85.01 = ? * 14.97 + 4.99^2$

45 + 85 = ? * 15 + 25

105 = ? * 15

? = 105/15

? = 7

Hence option A

31. Questions

Answer: A

112 + 17 * 1 = 129

129 – 17 * 2 = 95

95 + 17 * 3 = 146

146 – 17 * 4 = 78

Hence option A

32. Questions

Answer: C

5 * 2 – 2 = 8

8 * 3 – 3 = 21

21 * 4 – 4 = 80

80 * 5 – 5 = 395

Hence option C

33. Questions

Answer: B

$87 + 4^2 = 103$

$103 + 6^2 = 139$

$139 + 8^2 = 203$

$203 + 10^2 = 303$

Hence option B

34. Questions

Answer: D

$7^2 + 7 = 56$

$11^2 + 11 = 132$

$13^2 + 13 = 182$

$17^2 + 17 = 306$

$19^2 + 19 = 380$

Hence option D

35. Questions

Answer: C

8 * 1 = 8

8 * 3 = 24

24 * 5 = 120

120 * 7 = 840

Hence option C

36. Questions

Answer: C

$x^2+12x+27=0$

$x^2+3x+9x+27=0$

$x(x+3)+3(x+9)=0$

x=-9, -3

$y^2+3y-108=0$

$y+12y-9y-108=0$

$(y+12)(y-9)=0$

$y=-12,+9$

Hence, option C

x = y or the relationship cannot be determined.

37. Questions

Answer: D

$2x^2-11x+12=0$

$2x^2-8x-3x+12=0$

$(2x-3)(x-4)=0$

$x=+1.5,+4$

$y^2-10y-9y+90=0$

$(y-10)(y-9)=0$

$y=+10,+9$

Hence, option D (x < y)

38. Questions

Answer: A

$x^2-6x-187=0$

$x^2-17x+11x-187=0$

$(x-17)(x+11)=0$

$x=+17,-11$

$y^2+34y+273=0$

$y^2+21y+13y+273=0$

$(y+21)(y+13)=0$

$y=-21,-13$

Hence, Option A (x > y)

39. Questions

Answer: A

$5x^2+2x-24=0$

$5x^2+12x-10x-24=0$

x = -2.4, +2

$y^2+21y+54=0$

$y^2+18y+3y+54=0$

(y+18) (y+3) = 0

y = -18, -3

Hence, option A (x > y)

40. Questions

Answer: D

$x^2 + 24x + 128 = 0$

$x^2 + 16x + 8x + 128 = 0$

(x + 16) (x + 8) = 0

x = -16, -8

15y = 396 – 216

15y = 180

y = 12

Hence, option D (x < y)