1. Questions

Study the following data carefully and answer the questions given below:

A seller started a business by selling CDs in January. He deals in two types of CDs namely Audio CD and Video CD. The table given below shows the data regarding the total number of CDs sold and the number of audio CDs sold by the seller during a period of five different months.

Months	The total number of CDs sold till the end of the month	The number of audio CDs sold till the end of the month
January	1000	600
February	2500	1350
March	4300	2650
April	5800	3550
May	7400	4700

The selling prices of audio and video CDs were in the ratio of 6:5. If the total revenue generated by selling CDs in April was Rs. 16800, then find the selling price of a video CD in April.

a. Rs. 9

b. Rs. 10

c. Rs. 12

d. Rs. 18

e. Rs. 24

2. Questions

If the ratio of the total number of CDs to video CDs manufactured in March is 5:2 and the total number of CDs unsold in March is 1.4 times of video CDs unsold in March, then find the number of audio CDs unsold in March.

a. 216

b. 188

c. 232

d. 200

e. 208

3. Questions

If the total number of CDs sold in June is 8% more than the previous month and the number of video CDs sold in June is 1.28 times that in April, then find the number of audio CDs sold in June.

a. 480

b. 720

c. 960

d. 630

e. 225

4. Questions

Find the ratio of the sum of the number of video CDs sold in February and March together to the number of audio CDs sold in May.

a. 23:22

b. 25:23

c. 23:24

d. 22:25

e. 20:21

5. Questions

If the average number of CDs (Photo + audio + video CDs) sold in May is 700, then find the difference of the number of audio CDs and photo CDs sold in May.

a. 450

b. 444

c. 564

d. 606

e. 650

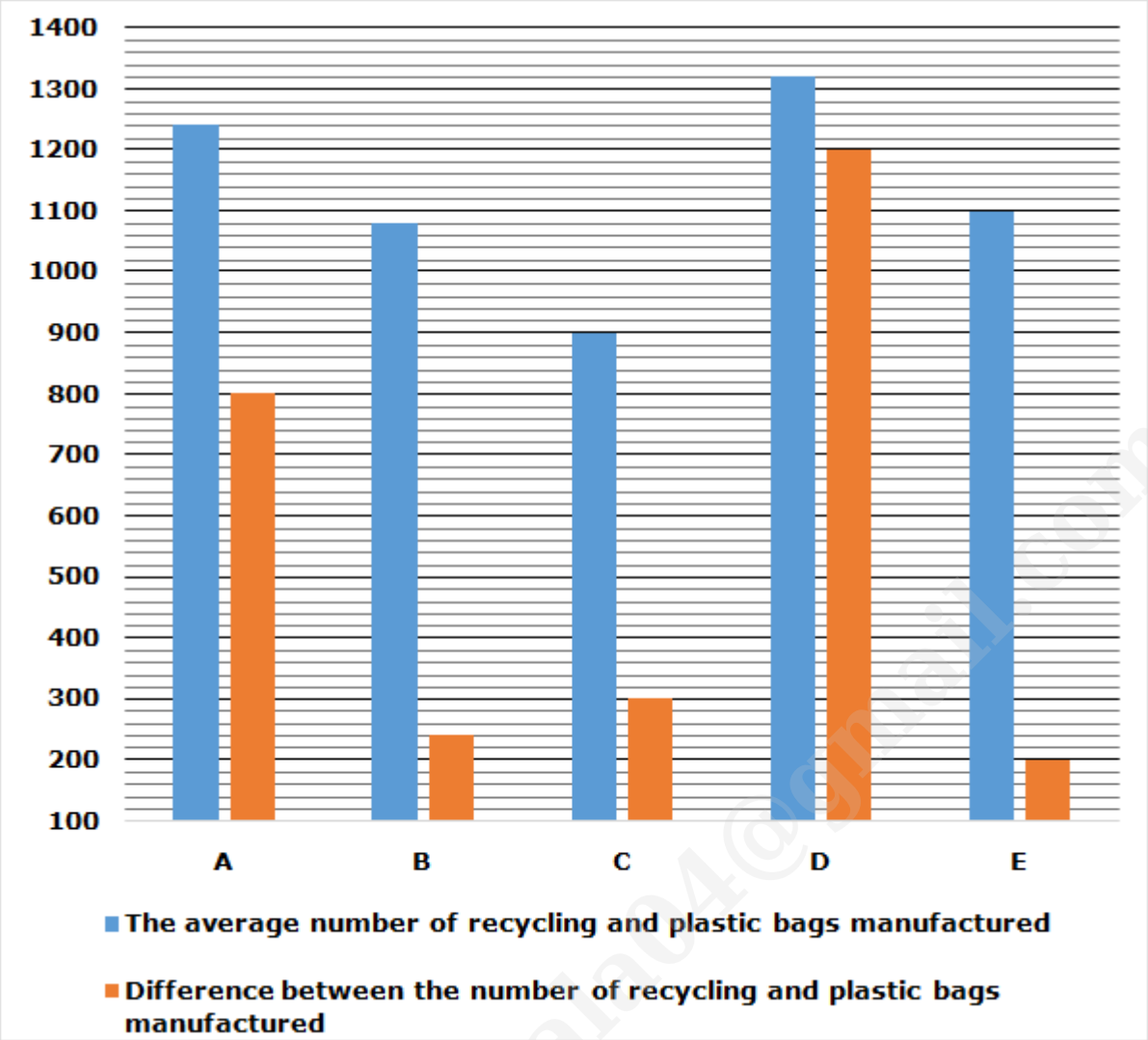
6. Questions

Study the following data carefully and answer the questions given below:

The given line graph shows the average number of bags (recycling + plastic) manufactured in five different companies i.e. A, B, C, D and E in May month and also shows the difference between the number of recycling and plastic bags manufactured in the same company.

Note:

The number of plastic bags manufactured in each company is more than that of recycling bags.



If the number of plastic bags manufactured in D now is 60 more and the ratio of the number of plastic to recycling bags manufactured in D now is (x + 7): x, then find the value of x.

a. 7

b. 4

c. 3

d. 11

e. 2

7. Questions

In E, if 20% of plastic bags manufactured are black colour and the remaining are white colour and 64% of recycling bags manufactured are white colour, then find the average number of bags manufactured are white colour in E.

a. 800

b. 720

c. 960

d. 840

e. 1080

8. Questions

In June, the number of plastic and recycling bags manufactured in A is 25% less and 70 less than that in May, then find the total number of bags manufactured in June is how much percent more/ less than the total number of bags manufactured in the previous month?

a. 22.45% more

b. 36.54% less

c. 44.24% less

d. 28.57% more

e. 19.35% less

9. Questions

If the total number of bags manufactured in F is 25% more than the sum of the number of plastic bags manufactured in A and B, then find the total number of bags manufactured in F.

a. 2550

b. 3250

c. 3550

d. 2840

e. 3840

10. Questions

If only 3/7th of recycling bags are sold in C and D together, then find the difference of the number of recycling bags are unsold in C and D together and the number of plastic bags manufactured in B.

a. 120

b. 174

c. 224

d. 360

e. 336

11. Questions

Following questions have two quantities as Quantity I and Quantity II. You have to determine the relationship between them and give answer as,

Quantity I: The speed of a man increases by 3 km/hr after every 20 minutes. If the distance travelled by a

man in 1st 20 minutes is 4 km, then find the distance travelled by a man in 2 hours.

Quantity II: 56

a. Quantity I > Quantity II
b. Quantity I ≥ Quantity II
c. Quantity I < Quantity II
d. Quantity I ≤ Quantity II
e. Quantity I = Quantity II or Relation cannot be established

12. Questions

Quantity I: The perimeter of a rhombus is 100 cm. The length of the smaller diagonal is 25% less than the length of the larger diagonal. Find the area of the rhombus.

Quantity II: Find the volume of a cone of diameter 18 cm and height 7 cm.

a. Quantity I > Quantity II
b. Quantity I ≥ Quantity II
c. Quantity I < Quantity II
d. Quantity I ≤ Quantity II
e. Quantity I = Quantity II or Relation cannot be established

13. Questions

Quantity I: The present age of Abi is 25% more than that of Soni. The sum of the age of Abi before 10 years and the age of Soni after 6 years is 50 years. Find the present age of Abi.

Quantity II: A two digit number when decreased by 6 becomes 75% of itself. The number 'X' is 12 more than the given two digit number. Find the value of X.

a. Quantity I > Quantity II
b. Quantity I ≥ Quantity II
c. Quantity I < Quantity II
d. Quantity I ≤ Quantity II
e. Quantity I = Quantity II or Relation cannot be established

14. Questions

Quantity I: The letters of the word "CORRECT" can be arranged in 'n' ways such that the vowels are always together. Find the value of 'n'.

Quantity II: The three colours of balls in a bag i.e. Red, Blue and Green. The probability of picking a Red or a Blue ball from a bag is 2/3. If there are 1080 balls in the bag, then how many green balls are in the

bag?

a. Quantity I > Quantity II
b. Quantity I ≥ Quantity II
c. Quantity I < Quantity II
d. Quantity I ≤ Quantity II
e. Quantity I = Quantity II or Relation cannot be established

15. Questions

Quantity I: M, N and O alone can complete a work in 12 days, 15 days and 20 days respectively. All of them started working together, M worked for x days, O left x days before the completion of the work. Find the value of x if the whole work is completed in 8 days.

Quantity II: $x = \sqrt{324} - \sqrt{1024} + \sqrt[3]{8000}$

a. Quantity I > Quantity II
b. Quantity I ≥ Quantity II
c. Quantity I < Quantity II
d. Quantity I ≤ Quantity II
e. Quantity I = Quantity II or Relation cannot be established

16. Questions

A man invested a certain sum in a scheme offering a compound interest of R% p.a. compounded annually. If simple interest and compound interest received at the end of 2 years are Rs. 5600 and Rs. 6580, then find the sum.

a. Rs. 4000
b. Rs. 12000
c. Rs. 8400
d. Rs. 8000
e. Rs. 6600

17. Questions

A and B invested Rs. 4000 and Rs. P respectively. After 4 months, B left and C invested amount is half that of B. Again after 4 months, C left and the Profit ratio of A and C at the end of a year is 4:1, then find the invested amount of B.

a. Rs. 4200
b. Rs. 3000

c. Rs. 6000

d. Rs. 5600

e. Rs. 6400

18. Questions

The ratio of curd to water in two mixtures X and Y is equal. The total quantity of curd in Y is 15 litres more than that in X. If the total quantities of curd and water in both mixtures together are 85 litres and 119 litres respectively, then find the total quantity of mixture X.

a. 72 litres

b. 68 litres

c. 84 litres

d. 104 litres

e. 112 litres

19. Questions

The average age of 20 students in a class is 18 years. If the age of 2 students whose age is X years and (X + 8) years is included, then the average age is increased by 1 year. Find the average age of the new students.

a. 33 years

b. 29 years

c. 26 years

d. 27 years

e. 35 years

20. Questions

The cost price of the article is Rs. 800 and the shopkeeper gives 20% discount on marked price. If the shopkeeper earns 12% on cost price, then the marked price of the article is how much percent more than the cost price of the article?

a. 32%

b. 24%

c. 40%

d. 48%

e. 44%

21. Questions

The ratio of the speed of a boat in still water to the speed of the current is 9:4 respectively. If the time taken by the boat to travel (D + 15) km downstream is equal to the time taken by the boat to travel (D – 25) km upstream, then find the value of D.

a. 42

b. 50

c. 56

d. 47

e. 38

22. Questions

Three outlet pipes i.e. A, B and C together can empty 3/5th part of a fully filled tank in 'n' hours. The efficiency of pipe B is equal to that of pipe C and pipe C is 50% less efficient than pipe A. If pipe A alone can empty 50% of the tank in 2.5 hours, then find the value of n.

a. 1.5

b. 2.25

c. 1.25

d. 3

e. 2

23. Questions

The length and breadth of a rectangle are in the ratio of 16:9. The perimeter of the rectangle is 68 cm more than the length of the rectangle. If the area of the square is 100 cm^2 more than that of the rectangle, then find the perimeter of the square.

a. 100 cm

b. 96 cm

c. 104 cm

d. 108 cm

e. 112 cm

24. Questions

The train crosses a pole in 10 seconds. The sum of the length of the train and platform is 540 metres. If the length of the same train is reduced by 30 metres and to cross the platform in 17 seconds, then find the time taken to cross the same platform by train with initial length.

a. 24 seconds

b. 18 seconds

c. 36 seconds

d. 20 seconds

e. 42 seconds

25. Questions

On one day, 40% of total students in a school are absent. 20% of the students who were present were roaming outside of their classes and the rest of them were inside their classes. The ratio of the boys to girls who were inside their classes is 9:7. If the number of boys who were inside their classes was 648, then find the total number of students in the school.

a. 1600

b. 1440

c. 2160

d. 2400

e. 3200

26. Questions

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

$(256^6 \div 64^9) * 16^4 = 4^{?-1}$

a. 4

b. 5

c. 6

d. 7

e. 3

27. Questions

$?^2 = (\sqrt{841} + \sqrt{289})\%$ of $800 - 7^2 * (\sqrt{100} - \sqrt{9})$

a. 5

b. 7

c. 8

d. 15

e. 12

28. Questions

$[5(3/4) + 6(1/2) + 2(3/8)] * (16/13) = ?$

a. 12

b. 30

c. 15

d. 36

e. 18

29. Questions

1680 + 960 – 1020 = ? * 2 + 560

a. 640

b. 500

c. 460

d. 530

e. 670

30. Questions

(780 * 120) ÷ 360 + 320 = ? - 480

a. 1156

b. 1240

c. 1080

d. 1320

e. 1060

31. Questions

What value should come in the place of (?) in the following number series?

612, 487, ?, 396, 388, 387

a. 439

b. 412

c. 423

d. 404

e. 441

32. Questions

118, 122, 129, 141, ?, 188

a. 172

b. 164

c. 158

d. 160

e. 170

33. Questions

9, 25, 67, 121, ?, 337

a. 254

b. 221

c. 225

d. 189

e. 289

34. Questions

22, 39, ?, 91, 121, 169

a. 45

b. 85

c. 65

d. 75

e. 55

35. Questions

7, 43, 216, ?, 2596, 5193

a. 645

b. 865

c. 755

d. 961

e. 786

36. Questions

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

I). $x^2 + 22x + 112 = 0$

II). $y^2 + 31y + 238 = 0$

a. $x \geq y$

b. $x \leq y$

c. $x < y$

d. $x = y$ or the relation cannot be established

e. $x > y$

37. Questions

I). $(y + 2)^2 = 121$

II). $x^2 - 20x + 99 = 0$

a. $x > y$

b. $x \geq y$

c. $x < y$

d. $x = y$ or the relation cannot be established

e. $x \leq y$

38. Questions

I). $x^2 - 6\sqrt{2}x + 16 = 0$

II). $y^2 - y - 132 = 0$

a. $x > y$

b. $x \geq y$

c. $x \leq y$

d. $x = y$ or the relation cannot be established

e. $x < y$

39. Questions

I). $x^2 / 2^3 + x = 4^2$

II). $13y - 4^3 = 40$

a. $x > y$

b. $x \geq y$

c. x < y

d. x = y or the relation cannot be established

e. x ≤ y

40. Questions

I). 8x + 6y = 92

II). 5x + 2y = 47

a. x > y

b. x ≥ y

c. x ≤ y

d. x < y

e. x = y or the relation cannot be established

Explanations:

1. Questions

In January:

The total number of CDs sold = 1000

The number of audio CDs sold = 600

The number of video CDs sold = 1000 – 600 = 400

In February:

The total number of CDs sold = 2500 – 1000 = 1500

The number of audio CDs sold = 1350 – 600 = 750

The number of video CDs sold = 1500 – 750 = 750

Similarly, we can calculate other values.

Months	The total number of CDs sold	The number of audio CDs sold	The number of video CDs sold
January	1000	600	400
February	1500	750	750
March	1800	1300	500
April	1500	900	600
May	1600	1150	450

Answer: B

Let the selling prices of audio CDs and Video CDs be Rs. 6x and Rs. 5x respectively.

According to the question,

(900 * 6x) + (600 * 5x) = 16800

600 [9x + 5x] = 16800

14x = 28

x = 2

The selling price of a video CDs = 5 * 2 = Rs. 10

2. Questions

In January:

The total number of CDs sold = 1000

The number of audio CDs sold = 600

The number of video CDs sold = 1000 – 600 = 400

In February:

The total number of CDs sold = 2500 – 1000 = 1500

The number of audio CDs sold = 1350 – 600 = 750

The number of video CDs sold = 1500 – 750 = 750

Similarly, we can calculate other values.

Months	The total number of CDs sold	The number of audio CDs sold	The number of video CDs sold
January	1000	600	400
February	1500	750	750
March	1800	1300	500
April	1500	900	600
May	1600	1150	450

Answer: D

Let the total number of CDs and the number of video CDs manufactured in March be 5x and 2x respectively.

Let the number of video CDs unsold in March be 5y

So, the total number of CDs unsold in March = 5y * 1.4 = 7y

5x – 7y = 1800 ------->(1)

2x – 5y = 500 --------->(2)

By solving equation (1) * 2 and equation (2) * 5, we get

11y = 1100

y = 100

The number of audio CDs unsold in March = 7y – 5y = 2 * 100 = 200

3. Questions

In January:

The total number of CDs sold = 1000

The number of audio CDs sold = 600

The number of video CDs sold = 1000 – 600 = 400

In February:

The total number of CDs sold = 2500 – 1000 = 1500

The number of audio CDs sold = 1350 – 600 = 750

The number of video CDs sold = 1500 – 750 = 750

Similarly, we can calculate other values.

Months	The total number of CDs sold	The number of audio CDs sold	The number of video CDs sold
January	1000	600	400
February	1500	750	750
March	1800	1300	500
April	1500	900	600
May	1600	1150	450

Answer: C

The total number of CDs sold in June = 1600 * [1 + (8/100)] = 16 * 108 = 1728

The number of video CDs sold in June = 1.28 * 600 = 768

The number of audio CDs sold in June = 1728 – 768 = 960

4. Questions

In January:

The total number of CDs sold = 1000

The number of audio CDs sold = 600

The number of video CDs sold = 1000 – 600 = 400

In February:

The total number of CDs sold = 2500 – 1000 = 1500

The number of audio CDs sold = 1350 – 600 = 750

The number of video CDs sold = 1500 – 750 = 750

Similarly, we can calculate other values.

Months	The total number of CDs sold	The number of audio CDs sold	The number of video CDs sold
January	1000	600	400
February	1500	750	750
March	1800	1300	500
April	1500	900	600
May	1600	1150	450

Answer: B

The sum of the number of video CDs sold in February and March = 750 + 500 = 1250

Required ratio = 1250:1150 = 25:23

5. Questions

In January:

The total number of CDs sold = 1000

The number of audio CDs sold = 600

The number of video CDs sold = 1000 – 600 = 400

In February:

The total number of CDs sold = 2500 – 1000 = 1500

The number of audio CDs sold = 1350 – 600 = 750

The number of video CDs sold = 1500 – 750 = 750

Similarly, we can calculate other values.

Months	The total number of CDs sold	The number of audio CDs sold	The number of video CDs sold
January	1000	600	400
February	1500	750	750
March	1800	1300	500
April	1500	900	600
May	1600	1150	450

Answer: E

The sum of the number of CDs (Photo + audio + video) sold in May = 700 * 3 = 2100

The number of Photo CDs sold in May = 2100 – 1600 = 500

Required difference = 1150 – 500 = 650

6. Questions

For A,

The total number of bags manufactured = 1240 * 2 = 2480

Let the number of recycling bags manufactured be x.

So, the number of plastic bags manufactured = x + 800

x + x + 800 = 2480

2x = 1680

x = 840

The number of recycling bags manufactured = 840

The number of plastic bags manufactured = 840 + 800 = 1640

Similarly, we can calculate other values.

Companies	The number of plastic bags manufactured	The number of recycling bags manufactured
A	1640	840
B	1200	960
C	1050	750
D	1920	720
E	1200	1000

Answer: B

The number of plastic bags manufactured in D now = 1920 + 60 = 1980

The ratio of the number of plastic to recycling bags manufactured in D now = 1980:720 = 11:4

Required value = x = 4

7. Questions

For A,

The total number of bags manufactured = 1240 * 2 = 2480

Let the number of recycling bags manufactured be x.

So, the number of plastic bags manufactured = x + 800

x + x + 800 = 2480

2x = 1680

x = 840

The number of recycling bags manufactured = 840

The number of plastic bags manufactured = 840 + 800 = 1640

Similarly, we can calculate other values.

Companies	The number of plastic bags manufactured	The number of recycling bags manufactured
A	1640	840
B	1200	960
C	1050	750
D	1920	720
E	1200	1000

Answer: A

The number of plastic bags manufactured in white colour = 1200 * [1 - (20/100)] = 1200 * (80/100) = 960

The number of recycling bags manufactured in white colour = 1000 * 64/100 = 640

Required average = [960 + 640]/2 = 800

8. Questions

For A,

The total number of bags manufactured = 1240 * 2 = 2480

Let the number of recycling bags manufactured be x.

So, the number of plastic bags manufactured = x + 800

x + x + 800 = 2480

2x = 1680

x = 840

The number of recycling bags manufactured = 840

The number of plastic bags manufactured = 840 + 800 = 1640

Similarly, we can calculate other values.

Companies	The number of plastic bags manufactured	The number of recycling bags manufactured
A	1640	840
B	1200	960
C	1050	750
D	1920	720
E	1200	1000

Answer: E

The number of plastic bags manufactured in A in June = 1640 * [1 - (25/100)] = 1640 * (75/100) = 1230

The number of recycling bags manufactured in A in June = 840 – 70 = 770

The total number of bags manufactured in A in June = 1230 + 770 = 2000

The total number of bags manufactured in A in May = 1640 + 840 = 2480

Required percentage = [(2480 – 2000)/ 2480] * 100 = (480/2480) * 100 = 19.35% less

9. Questions

For A,

The total number of bags manufactured = 1240 * 2 = 2480

Let the number of recycling bags manufactured be x.

So, the number of plastic bags manufactured = x + 800

x + x + 800 = 2480

2x = 1680

x = 840

The number of recycling bags manufactured = 840

The number of plastic bags manufactured = 840 + 800 = 1640

Similarly, we can calculate other values.

Companies	The number of plastic bags manufactured	The number of recycling bags manufactured
A	1640	840
B	1200	960
C	1050	750
D	1920	720
E	1200	1000

Answer: C

The sum of the number of plastic bags manufactured in A and B together = 1640 + 1200 = 2840

The total number of bags manufactured in F = 2840 * (125/100)

= 3550

10. Questions

For A,

The total number of bags manufactured = 1240 * 2 = 2480

Let the number of recycling bags manufactured be x.

So, the number of plastic bags manufactured = x + 800

x + x + 800 = 2480

2x = 1680

x = 840

The number of recycling bags manufactured = 840

The number of plastic bags manufactured = 840 + 800 = 1640

Similarly, we can calculate other values.

Companies	The number of plastic bags manufactured	The number of recycling bags manufactured
A	1640	840
B	1200	960
C	1050	750
D	1920	720
E	1200	1000

Answer: D

The number of recycling bags unsold in C and D together= [1 - (3/7)] * [750 + 720]

= (4/7) * (1470) = 840

Required difference = 1200 – 840 = 360

11. Questions

Answer: C

Quantity I:

The speed of the man in 1st 20 minutes = (4/20) * 60 = 12 km/hr

Distance covered by man in 1st 20 minutes = 12 * (20/60) = 4 km

Distance covered by man in 2nd 20 minutes = (12 + 3) * (20/60) = 5 km

Distance covered by man in 3rd 20 minutes = (15 + 3) * (20/60) = 6 km

Similarly, we can calculate next 1 hour.

Distance covered by man in next 1 hour = 7 + 8 + 9 = 24 km

Therefore total distance covered by man = 24 + 15 = 39 km

Quantity II: 56

Hence, Quantity I < Quantity II

12. Questions

Answer: A

Quantity I:

Let the length of the larger diagonal be 2x cm.

So, the length of smaller diagonal = 2x * (75/100) = 1.5x cm

According to the question,

Length of each side of rhombus = 100/4 = 25 cm

Formula:

$[\text{first diagonal}/2]^2 + [\text{second diagonal}/2]^2 = [\text{side of the rhombus}]^2$

$(2x/2)^2 + (1.5x/2)^2 = 25^2$

$x^2 + 0.5625x^2 = 625$

$1.5625x^2 = 625$

$x^2 = 400$

$x = 20$

Length of smaller diagonal = 1.5 * 20 = 30 cm

Length of larger diagonal = 2 * 20 = 40 cm

Required area = (30 * 40) * (1/2) = 600 cm^2

Quantity I = 600

Quantity II:

Radius of a cone = 18/2 = 9 cm

Volume of a cone = (1/3) * (22/7) * 7 * 9 * 9

= 594 cm^3

Quantity II: 594

Hence, Quantity I > Quantity II

13. Questions

Answer: C

Quantity I:

Let the present ages of Abi and Soni be 5x years and 4x years respectively.

According to the question,

5x – 10 + 4x + 6 = 50

9x = 50 + 4

x = 54/9 = 6

The present age of Abi = 5 * 6 = 30 years

Quantity I = 30

Quantity II:

Let the two digit number be 'a'

According to the question,

a - (75/100) * a = 6

a * (25/100) = 6

a = 24

X = 24 + 12 = 36

Quantity II = 36

Hence, Quantity I < Quantity II

14. Questions

Answer: E

Quantity I:

All vowels can be arranged in 2! Ways

Remaining arrangement = n = (2! * 6!)/ (2! * 2!)

= 720/2 = 360

Quantity I = 360

Quantity II:

Probability of picking a green balls = 1 - (2/3) = 1/3

The number of green balls = 1080/3 = 360

Quantity II = 360

Hence, Quantity I = Quantity II

15. Questions

Answer: C

Quantity I:

Let the total work done = 60 units (L.C.M of 12, 15 and 20)

The amount of work done by M alone in one day = 60/12 = 5 units.

The amount of work done by N alone in one day = 60/15 = 4 units.

The amount of work done by O alone in one day = 60/20 = 3 units.

According to the question,

(5 * x) + (4 * 8) + (8 – x) * 3 = 60

5x + 32 + 24 – 3x = 60

2x = 60 – 56

x = 4/2 = 2

Quantity II:

$x = \sqrt{324} - \sqrt{1024} + \sqrt[3]{8000}$

x = 18 – 32 + 20

x = 38 – 32 = 6

Hence, Quantity I < Quantity II

16. Questions

Answer: D

Simple interest for a year = 5600/2 = Rs. 2800 = PR/100

The difference between the compound interest and simple interest after 2 years = 6580 – 5600 = Rs. 980 = PR*R/100

The rate of interest R = (980/2800) * 100 = 35%

Let 'P' be the sum invested by a man.

P * (35/100) * 2 = 5600

Required sum = Rs. 8000

17. Questions

Answer: C

C's invested amount = P * (1/2) = Rs. P/2

According to the question,

The profit ratio of A, B and C = (4000 * 12): (P * 4): (P/2) * 4

= (4000 * 3): P : (P/2)

(4000 * 3)/ (P/2) = 4/1

1000 * 3 = P/2

P = 6000

Required invested = Rs. 6000

18. Questions

Answer: C

Let the quantity of curd in X be z litres.

So, the quantity of curd in Y = (z + 15) litres.

According to the question,

z + z + 15 = 85

2z = 70

z = 35

The quantity of curd in X = 35 litres

The quantity of curd in Y = 35 + 15 = 50 litres

Let the quantity of water in X be 'a' litres

So, the quantity of water in Y = (119 – a) litres

35/a = 50/ (119 – a)

10a = 7 * (119 – a)

10a + 7a = 119* 7

a = 833/17

a = 49

The total quantity of mixture X = 35 + 49 = 84 litres

19. Questions

Answer: B

According to the question,

20 * 18 + X + X + 8 = 19 * 22

360 + 2X + 8 = 418

2X = 50

X = 25

The average age of new students = [25 + 25 + 8]/2

= 58/2 = 29 years

20. Questions

Answer: C

The selling price of the article = 800 * (112/100) = Rs. 896

The marked price of the article = 896 * (100/80) = Rs. 1120

Required % = [(1120 – 800)/800] * 100

= [320/800] * 100 = 40%

21. Questions

Answer: B

Let the speed of the boat in still water and the speed of the current be 9x km/hr and 4x km/hr respectively.

According to the question,

[(D + 15)/ (9x + 4x)] = [(D – 25)/ (9x – 4x)]

(D + 15) * 5 = (D – 25) * 13

5D + 75 = 13D –325

8D = 400

D = 50

22. Questions

Answer: A

Let the capacity of the tank be 100x litres.

So, the capacity of $3/5^{th}$ part of the tank = 100x * (3/5) = 60x litres.

The capacity of 50% of the tank = 50x litres.

The efficiency of pipe A = 50x/2.5 = 20x litres/hour

The efficiency of pipe B = the efficiency of pipe C = 20x/2 = 10x litres/hour

n = 60x/ [10x + 10x + 20x]

Required value = n = 6/4 = 1.5

23. Questions

Answer: C

Let the length and breadth of a rectangle be 16x cm and 9x cm respectively.

According to the question,

2 * [16x + 9x] = 68 + 16x

50x – 16x = 68

34x = 68

x = 2

The length and breadth of a rectangle be 32 cm and 18 cm respectively.

The area of a rectangle = 32 * 18 = 576 cm^2

The area of a square = 576 + 100 = 676 cm^2

The side of a square = √676 = 26 cm

The perimeter of a square = 26 * 4 = 104 cm

24. Questions

Answer: B

Let the length and speed of the train be 'L' metres and 'S' m/s respectively.

According to the question,

L = S * 10

540 - 30 = S * 17

510/17 = S

The speed of train = 30 m/s

Let 'T' be the time taken by the train to cross the platform.

540 = 30 * T

T = 18 seconds

25. Questions

Answer: D

Let the total number of students in the school be 100x

The number of students who were present = 100x * [1 - (40/100)]

= 100x * (60/100) = 60x

The number of students who were inside their classes = 60x * [1 - (20/100)] = 48x

According to the question,

The number of students who were inside their classes = 648 * (16/9) = 1152

48x = 1152

x = 1152/48 = 24

The total number of students in the school = 100 * 24 = 2400

26. Questions

Answer: C

$(256^6 \div 64^9) * 16^4 = 4^{?-1}$

$4^{?-1} = [(4^4)^6 \div (4^3)^9] * (4^2)^4$

$4^{?-1} = [4^{24} \div 4^{27}] * 4^8$

$4^{?-1} = 4^5$

? = 6

Hence, option C

27. Questions

Answer: A

$?^2 = (\sqrt{841} + \sqrt{289})\%$ of $800 - 7^2 * (\sqrt{100} - \sqrt{9})$

$?^2 = (29 + 17) * 8 - 49 * (10 - 3)$

$?^2 = 46 * 8 - 343$

$?^2 = 368 - 343$

$?^2 = 25$

? = 5

Hence, option A

28. Questions

Answer: E

$[5(3/4) + 6(1/2) + 2(3/8)] * (16/13) = ?$

$[(23/4) + (13/2) + (19/8)] * (16/13) = ?$

$[46 + 52 + 19]/8 * (16/13) = ?$

$117 * (2/13) = ?$

? = 18

Hence, option E

29. Questions

Answer: D

$1680 + 960 - 1020 = ? * 2 + 560$

$? * 2 = 2640 - 1020 - 560$

? = 1060/2

? = 530

Hence, option D

30. Questions

Answer: E

(780 * 120) ÷ 360 + 320 = ? – 480

260 + 320 + 480 = ?

? = 1060

Hence, option E

31. Questions

Answer: C

The given series follows the following pattern:

$612 - 5^3 = 487$

$487 - 4^3 = 423$

$423 - 3^3 = 396$

$396 - 2^3 = 388$

$388 - 1^3 = 387$

Hence, option C

32. Questions

Answer: D

The given series follows the following pattern:

118		122		129		141		**160**		188
	+4		+7		+12		+19		+28	
		+3		+5		+7		+9		

Hence, option D

33. Questions

Answer: B

The given series follows the following pattern:

$2^3 + 1 = 9$

$3^3 - 2 = 25$

$4^3 + 3 = 67$

$5^3 - 4 = 121$

$6^3 + 5 = 221$

$7^3 - 6 = 337$

Hence, option B

34. Questions

Answer: E

The given series follows the following pattern:

(12 * 2) – 2 = 22

(12 * 3) + 3 = 39

(12 * 5) - 5 = 55

(12 * 7) + 7 = 91

(12 * 11) – 11 = 121

(12 * 13) + 13 = 169

Hence, option E

35. Questions

Answer: B

The given series follows the following pattern:

(7 * 6) + 1 = 43

(43 * 5) + 1 = 216

(216 * 4) + 1 = 865

(865 * 3) + 1 = 2596

(2596 * 2) + 1 = 5193

Hence, option B

36. Questions

Answer: A

From I,

$x^2 + 22x + 112 = 0$

$x^2 + 8x + 14x + 112 = 0$

$x (x + 8) + 14 (x + 8) = 0$

$(x + 8)(x + 14) = 0$

$x = -14, -8$

From II,

$y^2 + 31y + 238 = 0$

$y^2 + 14y + 17y + 238 = 0$

$y(y + 14) + 17(y + 14) = 0$

$(y + 14)(y + 17) = 0$

$y = -14, -17$

X	relation	Y
-14	=	-14
-14	>	-17
-8	>	-14
-8	>	-17

So, $x \geq y$

Hence, option A

37. Questions

Answer: B

From I,

$(y + 2)^2 = 121$

$y + 2 = +11, -11$

$y = +9, -13$

From II,

$x^2 - 20x + 99 = 0$

$x^2 - 11x - 9x + 99 = 0$

$x(x - 11) - 9(x - 11) = 0$

$(x - 11)(x - 9) = 0$

$x = +11, +9$

x	relation	y
+11	>	+9
+11	>	-13
+9	=	+9
+9	>	-13

So, x ≥ y

Hence, option B

38. Questions

Answer: D

From I,

$x^2 - 6\sqrt{2}x + 16 = 0$

$x^2 - 4\sqrt{2}x - 2\sqrt{2}x + 16 = 0$

$x (x - 4\sqrt{2}) - 2\sqrt{2} (x - 4\sqrt{2}) = 0$

$(x - 4\sqrt{2}) (x - 2\sqrt{2}) = 0$

$x = 4\sqrt{2}, 2\sqrt{2}$

From II,

$y^2 - y - 132 = 0$

$y^2 - 12y + 11y - 132 = 0$

$y (y - 12) + 11 (y - 12) = 0$

$(y - 12) (y + 11) = 0$

$y = +12, - 11$

X	relation	y
$4\sqrt{2}$	<	+12
$4\sqrt{2}$	>	-11
$2\sqrt{2}$	<	+12
$2\sqrt{2}$	>	-11

So, the relationship between x and y cannot be determined.

Hence, option D

39. Questions

Answer: E

From I,

$x^2/ 2^3 + x = 4^2$

$x^2/8 + x = 16$

$x^2 + 8x = 128$

$x^2 + 8x – 128 = 0$

$x^2 + 16x – 8x – 128 = 0$

$x (x + 16) – 8 (x + 16) = 0$

$(x + 16) (x – 8) = 0$

$x = -16, +8$

From II,

$13y – 4^3 = 40$

$13y = 40 + 64$

$y = 104/13 = 8$

So, $x \leq y$

Hence, option E

40. Questions

Answer: A

$8x + 6y = 92$ ----------->(1)

$5x + 2y = 47$ ---------->(2)

Equation 2) * 3, we get

$15x + 6y = 141$ -------->(3)

By solving equations (1) &(3), we get

$7x = 49$

$x = 7$

Value of x apply on equation (2), we get

$2y = 47 – 35$

$y = 12/2 = 6$

So, $x > y$

Hence, option A