1. Questions

Study the following information carefully and answer the questions.

The given table chart shows the total number of emerald rings sold in five different shops i.e. A, B, C, D and E in 2020. It also provides the total number of diamond rings sold in these five shops and the total number of ruby rings sold in these five shops and the average number of emerald, diamond and ruby rings sold in these five shops.

Shops	The total number of emerald rings sold	The total number of diamond rings sold	The total number of ruby rings sold	The average number of emerald, diamond and ruby rings sold
A	180	160	Z	150
B	220	X	80	130
C	135	130	155	140
D	120	158	175	151
E	120	2X+6	Y	143

In shop B, if X number of customized emerald rings sold and the ratio of the number of customized diamond to ruby rings sold is 2:1 and the value of Y is equal to the sum of the number of customized diamond and ruby rings sold, then find the sum of the number of customized ruby rings sold and the number of non-customized emerald rings sold.

a. 161

b. 151

c. 171

d. 181

e. None of these

2. Questions

If the number of diamond rings sold to Ram by shops A and B is in the ratio of 8:5 and the number of ruby rings sold to Ram by shops A and B is in the ratio of 7:4 and the total number of (ruby + diamond) rings sold to Ram by shops A and B is 150 and 90 respectively, then find the total number of diamond rings not sold to Ram by both shops A and B.

a. 130

b. 120

c. 190

d. 160

e. None of these

3. Questions

If the total number of emerald rings sold by shop F is 3/5th of the total number of emerald rings

sold by shop C and the total number of diamond rings sold by shop F is $3/2^{th}$ of the total number of ruby rings sold by shop B and the average number of emerald, diamond and ruby rings sold by shop F is (Y-15), then find the total number of ruby rings sold by shop F.

   a. 103

   b. 113

   c. 123

   d. 116

   e. None of these

4. Questions

The total number of ruby rings sold by shops C and D together is what percentage more than the sum of the total number of diamond rings sold by shop C and the total number of emerald rings sold by shop D?

   a. 30%

   b. 32%

   c. 28%

   d. 24%

   e. None of these

5. Questions

In shop D, the total number of emerald rings sold is 2/3 of the total number of emerald rings unsold, the total number of diamond rings sold is 1/2 of the total number of diamond rings unsold and the total number of ruby rings sold is 35% of the total number of ruby rings unsold. Find the total number of all three rings (sold+ unsold)manufactured by shop D.

   a. 1269

   b. 1449

   c. 1532

   d. 1654

   e. None of these

6. Questions

Study the following information carefully and answer the questions.

The given line graph shows the percentage distribution of the number of Slit ACs sold in five different months i.e. June, July, August, September and October and also given the number of Window ACs sold in these five months.

Total number of ACs sold = Number of Slit ACs sold + Number of Window ACs sold

Note: The total number of Slit ACs sold in all five months together = 1500
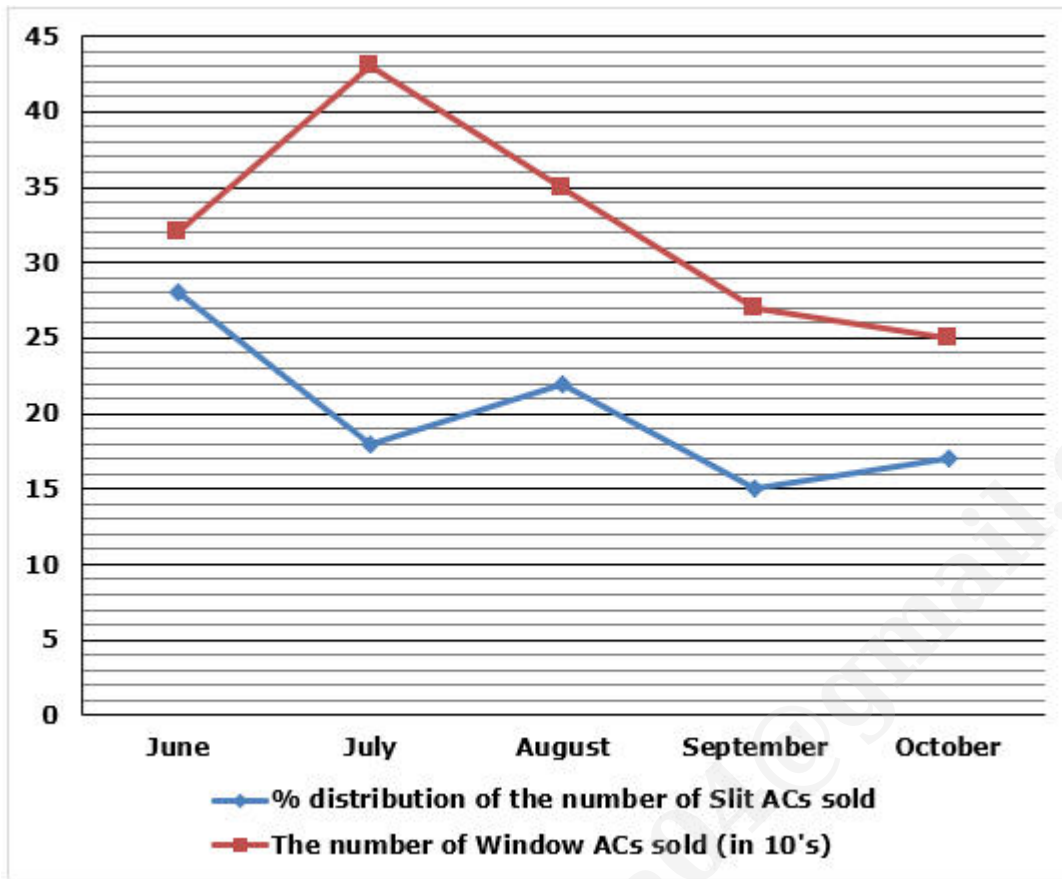
If the number of Slit ACs unsold in July is 2.5 times the difference between the number of Window ACs sold in August and September and the number of Window ACs unsold in July is 5/9th of the number of Slit ACs sold in that month, then find the total number of ACs (sold + unsold)manufactured in July.

    a. 1050

    b. 1080

    c. 1100

    d. 1030

    e. None of these

7. Questions

The average number of Window ACs sold in June, July and May is 8X. If the number of Window ACs unsold in May, June and July is 2/3, 1/4 and 1/5 of the number of windows ACs sold respectively and the average number of Window ACs unsold in May, June and July is 102, then find the value of X.

    a. 50

    b. 40

c. 60

d. 80

e. None of these

8. Questions

If the number of Slit ACs sold in November is 20% more than that in October and the average number of Slit and Window ACs sold in November is 293 and the number of Window ACs sold in November is 4/7th of the total number of Window ACs sold and unsold together in that month, then find the number of Window ACs unsold in November.

a. 220

b. 280

c. 230

d. 210

e. None of these

9. Questions

The number of Slit ACs sold in June is what percentage more than the number of Window ACs sold in October?

a. 75%

b. 68%

c. 44%

d. 52%

e. None of these

10. Questions

Find the average of the total number of ACs sold in August, September and October.

a. 520

b. 530

c. 450

d. 560

e. None of these

11. Questions

Read the following information carefully and answer the questions.

A certain students in four different classes i.e. A, B, C and D. They prefer either boating or game zones. The ratio of the total number of students who prefer boating to game zones in all four classes together is 27:25. The number of students who prefer game zones in class C is 40 more than that of class B. The number of students who prefer boating in class D is 30% more than that of class C. The ratio of the number of students who prefer boating in class A to class B is 7:4. The difference between the total number of students who prefer boating and game zones in all four classes together is 100. The average number of students who prefer game zones in classes A and D is 265. The number of students who prefer boating in class C is 40 less than those who prefer game zones in class B.

If the ratio of the number of students who prefer boating in class E to class D is 9:13 and the number of students who prefer game zones in class E is 30% of the total number of students in class C, then find the total number of students who prefer boating and game zones together in class E.

   a. 424

   b. 474

   c. 464

   d. 454

   e. None of these

12. Questions

Find the difference between the number of students who prefer boating in class B and the number of students who prefer game zones in class C.

   a. 140

   b. 150

   c. 160

   d. 170

   e. None of these

13. Questions

If the ratio of the number of male to female students who prefer boating in class B is 3:5 and the average number of male students who prefer boating and game zones in class B is 105, then find the number of female students who prefer game zones in class B.

   a. 120

   b. 150

   c. 220

   d. 210

   e. None of these

14. Questions

The number of students who prefer game zones in class B is what percentage of the total number of students in class C?

   a. 50%

   b. 75%

   c. 80%

   d. 60%

   e. None of these

15. Questions

If the number of students who prefer game zonesin class D is 10 less than 10% of the total number of students in all four classes together and the number of students who prefer game zones in classes A and F is S and (S+80) respectively, then find the ratio of the total number of students in class D to the number of students who prefer game zones in class F.

   a. 11:8

   b. 16:9

   c. 12:5

   d. 10:7

   e. 13:6

16. Questions

Mani invested Rs.6000 in S.I. at $X\%$ per annum for 2 years and after 2 years, he received a total amount of Rs.7800. If he invested the same amount in S.I.at $Y\%$ per annum for two years, then the interest becomes Rs.480 more. Find the value of (2X-Y).

   a. (X-4)

   b. (Y-4)

   c. (X-5)

   d. (Y-5)

   e. None of these

17. Questions

A and B entered into a business. A invested Rs.3500 for X months and B invested 40% more than A's investment for (X-2) months. The total profit of the business is Rs.(1.5Y-380) and the profit share of B is Rs.6370. Find the value of (2X+4) if the value of Y is equal to the sum of the investments A and B.

   a. 24

b. 26

c. 28

d. 22

e. None of these

18. Questions

Three vessels contain a mixture of milk and water. The ratio of milk and water in vessels A, B and C is 5:7:9 and 3:4:6 respectively. The difference between the quantity of water in vessels A and C is 15 liters. The quantity of milk in vessel C is 1/2 more than that of water in that vessel. If 5 liters of water is added to vessel B, then find the final quantity of the mixture in vessel B.

   a. 60 liters

   b. 70 liters

   c. 50 liters

   d. 80 liters

   e. None of these

19. Questions

The average weight of N ducks is 15kg. If two more ducks weighing 20 kg and 16 kg respectively are included, the average weight becomes 15(3/41) kg. Find the difference between the total weight of 25 donkeys and the total weight of N ducks if the average weight of 25 donkeys is (125% of N – 16) kg.

   a. 810 kg

   b. 900 kg

   c. 650 kg

   d. 720 kg

   e. None of these

20. Questions

In an election, there are 3 candidates: A, B, and C. Out of the total votes polled, 30% of votes are invalid. C got 1/5th of the total valid votes and A got 4/7 of the total valid votes A and B together got. B got 40% of the invalid votes, C got 36% of the invalid votes and A got the rest of 144 invalid votes. Find the difference between the valid votes B got and the invalid votes C got in the election.

   a. 254

   b. 274

   c. 264

d. 234

e. None of these

21. Questions

The length of the rectangle is 4 cm more than its breadth. If the area of the rhombus is 252 cm^2 and one of the diagonals of the rhombus is 6cm more than the length of the rectangle whose perimeter is 80 cm, then find the ratio of the shorter diagonal of the rhombus to the breadth of the rectangle.

a. 1:1

b. 3:2

c. 5:4

d. 2:1

e. None of these

22. Questions

The half of the difference between the downstream and upstream speed of the boat is X km/hr and the speed of the boat in still water is (X+4) km/hr. If the time taken by the boat to cover (2X+14) km in upstream in 10 hours and the time taken by the boat to cover (X+7Y) km in downstream in 3 hours, then find the value of Y.

a. 11

b. 22

c. 44

d. 33

e. None of these

23. Questions

A shopkeeper marked an article 60% above its cost price and sold it after giving a discount of 20%.

Then he made a profit of Rs.2100. Find 2/3rd of the cost price of the article if the selling price of the article is 64X.

a. Rs. 5000

b. Rs. 7500

c. Rs. 9600

d. Rs. 8500

e. None of these

24. Questions

The ratio of the speed of train A to train B is 3:4 and the ratio of the length of train A to train B is 21:19. The length of train A is 420 m. Trains A and B are running in opposite directions, they cross each other in 32/7 seconds. Find the time taken by train B to cross the platform, whose length is 3/4th of the length of train A.

   a. 5.95 seconds

   b. 6.15 seconds

   c. 7.15 seconds

   d. 6.95 seconds

   e. None of these

25. Questions

Pipe A can fill 16.67% of the tank in 5 hours and D can fill the tank in 90 hours. Pipes C and D together can fill one-third of the tank in 12 hours and pipe B can empty half of the tank in 22.5 hours. If pipe B is increased its efficiency by 80%, then find the time taken by pipes A, B and C together to fill the tank.

   a. 100 hours

   b. 110 hours

   c. 120 hours

   d. 150 hours

   e. None of these

26. Questions

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

72% of 300*0.5 +? = 416÷8 + √81 + 11^2

   a. 74

   b. 82

   c. 72

   d. 76

   e. 56

27. Questions

(23÷19) of (209 ÷46) +25% of 60 =?

   a. 10.5

   b. 20.4

   c. 20.5

   d. 30.4

   e. 7.5

28. Questions

$17^2 + 29^2 - 625 = ? * \sqrt{25}$

   a. 102

   b. 105

   c. 110

   d. 101

   e. 115

29. Questions

$5728 - 4247 + 9^2 = ?^3 - 166$

   a. 13

   b. 14

   c. 12

   d. 16

   e. 10

30. Questions

240% of 60% of 3600 − 9? = 27*19

   a. 519

   b. 429

   c. 329

   d. 256

   e. 484

31. Questions

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

12, 30, 112, 219, 542, ?

   a. 814

   b. 914

c. 824

d. 918

e. None of these

32. Questions

8, 15, 31, 65, ?, 223

   a. 124

   b. 120

   c. 132

   d. 128

   e. 126

33. Questions

74, 155, 317, ?, 884, 1289

   a. 624

   b. 564

   c. 560

   d. 540

   e. None of these

34. Questions

?, 101.1, 107.3, 116.6, 129, 144.5

   a. 99.8

   b. 100.5

   c. 97.2

   d. 101

   e. 98

35. Questions

53, ?, 208, 413, 822, 1639

   a. 92

   b. 105

   c. 81

d. 114

e. 99

36. Questions

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

I). $2x^2 - 15x + 28 = 0$

II). $3y^2 + 24y - 27 = 0$

a. x > y

b. x ≥ y

c. x < y

d. x ≤ y

e. x = y or relation cannot be established

37. Questions

I). $5x^2 - 16x - 16 = 0$

II). $4y^2 - 5y - 9 = 0$

a. x ≥ y

b. x > y

c. x ≤ y

d. x = y or relation cannot be established

e. x < y

38. Questions

I). $2x + 31y = -7x + 347$

II). $4x + 9y = 116$

a. x ≥ y

b. x > y

c. x ≤ y

d. x = y or relation cannot be established

e. x < y

39. Questions

I). $x^2 - 46x + 129 = 0$

II). $2y^2 - 19y - 46 = 0$

    a. $x > y$

    b. $x \geq y$

    c. $x < y$

    d. $x \leq y$

    e. $x = y$ or relation cannot be established

40. Questions

I). $3x^2 - 31x + 50 = 0$

II). $4y^2 + 37y + 75 = 0$

    a. $x > y$

    b. $x \geq y$

    c. $x < y$

    d. $x \leq y$

    e. $x = y$ or relation cannot be established

Explanations:

1. Questions

The total number of ruby rings sold by shop A = Z = 150 * 3 – (180 + 160) = 450 – 340 = 110

The total number of diamond rings sold by shop B = X = 130 * 3 – (220 + 80) = 390 – 300 = 90

The total number of diamond rings sold by shop E = 2 * 90 + 6 = 186

The total number of ruby rings sold by shop E = Y = 143 * 3 – (120 + 186) = 429 – 306 = 123

Shops	The total number of emerald rings sold	The total number of diamond rings sold	The total number of ruby rings sold
A	180	160	110
B	220	90	80
C	135	130	155
D	120	158	175
E	120	186	123

Answer: C

The number of customized emerald rings sold by shop B = 90

The number of non-customized emerald rings sold by shop B = 220 - 90 = 130

The sum of the number of customized diamond and ruby rings sold by shop B = 123

The number of customized ruby rings sold by shop B = 123 * 1/(2 + 1) = 123 * 1/3 = 41

Required sum = 130 + 41 = 171

2. Questions

The total number of ruby rings sold by shop A = Z = 150 * 3 – (180 + 160) = 450 – 340 = 110

The total number of diamond rings sold by shop B = X = 130 * 3 – (220 + 80) = 390 – 300 = 90

The total number of diamond rings sold by shop E = 2 * 90 + 6 = 186

The total number of ruby rings sold by shop E = Y = 143 * 3 – (120 + 186) = 429 –306 = 123

Shops	The total number of emerald rings sold	The total number of diamond rings sold	The total number of ruby rings sold
A	180	160	110
B	220	90	80
C	135	130	155
D	120	158	175
E	120	186	123

Answer: B

Let the number of diamond rings sold to Ram by shops A and B be 8X and 5Xrespectively.

Let the number of ruby rings sold to Ram by shops A and B be 7Y and 4Y respectively.

The total number of ruby and diamond rings sold to Ram by shop A = 150

The total number of ruby and diamond rings sold to Ram by shop B = 90

By framing equations,

8X+7Y =150----(1)

5X+4Y = 90----(2)

By solving equations 1 & 2, we get

X=10; Y=10

The number of diamond rings sold to Ram by shops A and B= 8X + 5X = 13 * 10 = 130

The number of diamond rings not sold to Ram by shops A and B = (160 + 90) -130 = 250 – 130 = 120

3. Questions

The total number of ruby rings sold by shop A = Z = 150 * 3 – (180 + 160) = 450 – 340 = 110

The total number of diamond rings sold by shop B = X = 130 * 3 – (220 + 80) = 390 – 300 = 90

The total number of diamond rings sold by shop E = 2 * 90 + 6 = 186

The total number of ruby rings sold by shop E = Y = 143 * 3 – (120 + 186) = 429 –306 = 123

Shops	The total number of emerald rings sold	The total number of diamond rings sold	The total number of ruby rings sold
A	180	160	110
B	220	90	80
C	135	130	155
D	120	158	175
E	120	186	123

Answer: C

In shop F,

The total number of emerald rings sold=3/5*135= 81

The total number of diamond rings sold=3/2*80 =120

The average number of rings sold = (Y-15) = 123-15 = 108

The total number of emerald, diamond and ruby rings sold = 108 * 3 = 324

The total number of ruby rings sold= 324 – (81+120)=324 - 201 = 123

4. Questions

The total number of ruby rings sold by shop A = Z = 150 * 3 – (180 + 160) = 450 – 340 = 110

The total number of diamond rings sold by shop B = X = 130 * 3 – (220 + 80) = 390 – 300 = 90

The total number of diamond rings sold by shop E = 2 * 90 + 6 = 186

The total number of ruby rings sold by shop E = Y = 143 * 3 – (120 + 186) = 429 –306 = 123

Shops	The total number of emerald rings sold	The total number of diamond rings sold	The total number of ruby rings sold
A	180	160	110
B	220	90	80
C	135	130	155
D	120	158	175
E	120	186	123

Answer: B

The total number of ruby rings sold by shops C and D together= 155+175 =330

The sum of the total number of diamond rings sold by shop C and the total number of emerald rings sold by shop D =130+120 = 250

Required percentage = (330 -250) *100 / 250 = 80*100/250 = 32%

5. Questions

The total number of ruby rings sold by shop A = Z = 150 * 3 – (180 + 160) = 450 – 340 = 110

The total number of diamond rings sold by shop B = X = 130 * 3 – (220 + 80) = 390 – 300 = 90

The total number of diamond rings sold by shop E = 2 * 90 + 6 = 186

The total number of ruby rings sold by shop E = Y = 143 * 3 – (120 + 186) = 429 –306 = 123

Shops	The total number of emerald rings sold	The total number of diamond rings sold	The total number of ruby rings sold
A	180	160	110
B	220	90	80
C	135	130	155
D	120	158	175
E	120	186	123

Answer: B

In shop D,

The total number of emerald rings unsold = 3/2* 120 =180

The total number of diamond rings unsold =2* 158 = 316

The total number of ruby rings unsold = (175/35)*100= 500

The total number of all three rings (sold + unsold) manufactured =(120+180) + (158+316) + (175+500) = 300+474+675=1449

6. Questions

The number of Slit ACs sold in June = 1500 * 28/100 = 420

The total number ACs sold in June = 420 + 320 = 740

The number of Slit ACs sold in July = 1500 * 18/100 = 270

The total number ACs sold in July = 270 + 430 = 700

Similarly,

Month	The total number of ACs sold	The number of Slit ACs sold	The number of Window ACs sold
June	740	420	320
July	700	270	430
August	680	330	350
September	495	225	270
October	505	255	250

Answer: A

In July,

The number of Slit ACs unsold = 2.5 * (the difference between the number of Window ACs sold in August and September) = 2.5 * (350 – 270) = 2.5 *(80) = 200

The number of Window ACs unsold = 5/9 of the number of Slit AC sold= 5*270/9= 150

The total number of ACs (sold + unsold) manufactured = 700 + 200 + 150 = 1050

7. Questions

The number of Slit ACs sold in June = 1500 * 28/100 = 420

The total number ACs sold in June = 420 + 320 = 740

The number of Slit ACs sold in July = 1500 * 18/100 = 270

The total number ACs sold in July = 270 + 430 = 700

Similarly,

Month	The total number of ACs sold	The number of Slit ACs sold	The number of Window ACs sold
June	740	420	320
July	700	270	430
August	680	330	350
September	495	225	270
October	505	255	250

Answer: B

The number of Window ACs unsold in June =2/8*320 = 80

The number of Window ACs unsold in July =1/5*430 = 86

The total number of Window ACs unsold in May, June and July = 102 * 3 = 306

The number of Window ACs unsold in May = 306 – (80 + 86) = 306 -166 =140

The number of Window ACs sold in May =3*140/2 =210

The total number of Window ACs sold in June, July and May=8X *3 = 24X

320+430+210 =24X

960 = 24X

X =40

8. Questions

The number of Slit ACs sold in June = 1500 * 28/100 = 420

The total number ACs sold in June = 420 + 320 = 740

The number of Slit ACs sold in July = 1500 * 18/100 = 270

The total number ACs sold in July = 270 + 430 = 700

Similarly,

Month	The total number of ACs sold	The number of Slit ACs sold	The number of Window ACs sold
June	740	420	320
July	700	270	430
August	680	330	350
September	495	225	270
October	505	255	250

Answer: D

The number of Slit ACs sold in November = (255*120)/100 =306

The total number of Slit and Window ACs sold in November = 293* 2 = 586

The number of Window ACs sold in November = 586-306 = 280

The total number of Window ACs sold and unsold together in November= 7*280/4 =490

The number of Window ACs unsold in November = 490-280 =210

9. Questions

The number of Slit ACs sold in June = 1500 * 28/100 = 420

The total number ACs sold in June = 420 + 320 = 740

The number of Slit ACs sold in July = 1500 * 18/100 = 270

The total number ACs sold in July = 270 + 430 = 700

Similarly,

Month	The total number of ACs sold	The number of Slit ACs sold	The number of Window ACs sold
June	740	420	320
July	700	270	430
August	680	330	350
September	495	225	270
October	505	255	250

Answer: B

Required percentage = (420-250/250)*100 = (170/250)*100 = 68%

10. Questions

The number of Slit ACs sold in June = 1500 * 28/100 = 420

The total number ACs sold in June = 420 + 320 = 740

The number of Slit ACs sold in July = 1500 * 18/100 = 270

The total number ACs sold in July = 270 + 430 = 700

Similarly,

Month	The total number of ACs sold	The number of Slit ACs sold	The number of Window ACs sold
June	740	420	320
July	700	270	430
August	680	330	350
September	495	225	270
October	505	255	250

Answer: D

The total number of ACs sold in August, September, and October together=680+495+505 = 1680

Required average = 1680/3 =560

11. Questions

Let the total number of students who prefer boating and game zones in all four classes together be 27T and 25T respectively.

The difference between the total number of students who prefer boating and game zones in all four classes together = 100

27T – 25T = 100

T = 50

The total number of students who prefer boating in all four classes together = 27 * 50 = 1350

The total number of students who prefer game zones in all four classes together = 25 * 50 = 1250

The total number of students who prefer game zones in classes A and D together =265*2= 530

The total number of students who prefer game zones in classes B and C together = 1250 – 530 = 720

Let the number of students who prefer game zones in class B be Y.

And the number of students who prefer game zones in class C = Y+40

Y + (Y + 40) = 720

2Y = 680

Y = 340

The number of students who prefer game zones in class B = 340

The number of students who prefer game zones in class C = 340 + 40 = 380

The number of students who prefer boating in class C =340-40 =300

The number of students who prefer boating in class D = 300 * 130/100 = 390

Let the number of students who prefer boating in classes A and B be 7X and 4X respectively.

The total number of students who prefer boating in classes A and B together = 1350 – (300 + 390) = 660

7X + 4X = 660

X = 60

The number of students who prefer boating in class A= 7X = (7*60) = 420

The number of students who prefer boating in class B = 4X = (4*60) = 240

The total number of students in class B = 240 + 340 = 580

The total number of students in class C = 300 + 380 = 680

Classes	The total number of students	The number of students who prefer boating	The number of students who prefer game zones
A	-	420	-
B	580	240	340
C	680	300	380
D	-	390	-

Answer: B

The number of students who prefer boating in class E = (390 *9/13) = 270

The number of students who prefer game zones in class E = (680*30)/100 = 204

The total number of students in class E =270+204 =474

12. Questions

Let the total number of students who prefer boating and game zones in all four classes together be 27T and 25T respectively.

The difference between the total number of students who prefer boating and game zones in all four classes together = 100

27T – 25T = 100

T = 50

The total number of students who prefer boating in all four classes together = 27 * 50 = 1350

The total number of students who prefer game zones in all four classes together = 25 * 50 = 1250

The total number of students who prefer game zones in classes A and D together =265*2= 530

The total number of students who prefer game zones in classes B and C together = 1250 – 530 = 720

Let the number of students who prefer game zones in class B be Y.

And the number of students who prefer game zones in class C = Y+40

Y + (Y + 40) = 720

2Y = 680

Y = 340

The number of students who prefer game zones in class B = 340

The number of students who prefer game zones in class C = 340 + 40 = 380

The number of students who prefer boating in class C =340-40 =300

The number of students who prefer boating in class D = 300 * 130/100 = 390

Let the number of students who prefer boating in classes A and B be 7X and 4X respectively.

The total number of students who prefer boating in classes A and B together = 1350 – (300 + 390) = 660

7X + 4X = 660

X = 60

The number of students who prefer boating in class A= 7X = (7*60) = 420

The number of students who prefer boating in class B = 4X = (4*60) = 240

The total number of students in class B = 240 + 340 = 580

The total number of students in class C = 300 + 380 = 680

Classes	The total number of students	The number of students who prefer boating	The number of students who prefer game zones
A	-	420	-
B	580	240	340
C	680	300	380
D	-	390	-

Answer: A

Required difference = 380 - 240 = 140

13. Questions

Let the total number of students who prefer boating and game zones in all four classes together be 27T and 25T respectively.

The difference between the total number of students who prefer boating and game zones in all four classes together = 100

27T – 25T = 100

T = 50

The total number of students who prefer boating in all four classes together = 27 * 50 = 1350

The total number of students who prefer game zones in all four classes together = 25 * 50 = 1250

The total number of students who prefer game zones in classes A and D together =265*2= 530

The total number of students who prefer game zones in classes B and C together = 1250 – 530 = 720

Let the number of students who prefer game zones in class B be Y.

And the number of students who prefer game zones in class C = Y+40

Y + (Y + 40) = 720

2Y = 680

Y = 340

The number of students who prefer game zones in class B = 340

The number of students who prefer game zones in class C = 340 + 40 = 380

The number of students who prefer boating in class C =340-40 =300

The number of students who prefer boating in class D = 300 * 130/100 = 390

Let the number of students who prefer boating in classes A and B be 7X and 4X respectively.

The total number of students who prefer boating in classes A and B together = 1350 – (300 + 390) = 660

7X + 4X = 660

X = 60

The number of students who prefer boating in class A= 7X = (7*60) = 420

The number of students who prefer boating in class B = 4X = (4*60) = 240

The total number of students in class B = 240 + 340 = 580

The total number of students in class C = 300 + 380 = 680

Classes	The total number of students	The number of students who prefer boating	The number of students who prefer game zones
A	-	420	-
B	580	240	340
C	680	300	380
D	-	390	-

Answer: C

The number of male students who prefer boating in class B= (240/8)*3 =90

The number of female students who prefer boating in class B= (240/8)*5 =150

The total number of male students who prefer boating and game zones together in class B = 105 * 2 = 210

The number of male students who prefer game zone in class B= 210-90=120

The number of female students who prefer game zone in class B= 340- 120 = 220

14. Questions

Let the total number of students who prefer boating and game zones in all four classes together be 27T and 25T respectively.

The difference between the total number of students who prefer boating and game zones in all four classes together = 100

27T – 25T = 100

T = 50

The total number of students who prefer boating in all four classes together = 27 * 50 = 1350

The total number of students who prefer game zones in all four classes together = 25 * 50 = 1250

The total number of students who prefer game zones in classes A and D together =265*2= 530

The total number of students who prefer game zones in classes B and C together = 1250 – 530 = 720

Let the number of students who prefer game zones in class B be Y.

And the number of students who prefer game zones in class C = Y+40

Y + (Y + 40) = 720

2Y = 680

Y = 340

The number of students who prefer game zones in class B = 340

The number of students who prefer game zones in class C = 340 + 40 = 380

The number of students who prefer boating in class C = 340-40 =300

The number of students who prefer boating in class D = 300 * 130/100 = 390

Let the number of students who prefer boating in classes A and B be 7X and 4X respectively.

The total number of students who prefer boating in classes A and B together = 1350 – (300 + 390) = 660

7X + 4X = 660

X = 60

The number of students who prefer boating in class A= 7X = (7*60) = 420

The number of students who prefer boating in class B = 4X = (4*60) = 240

The total number of students in class B = 240 + 340 = 580

The total number of students in class C = 300 + 380 = 680

Classes	The total number of students	The number of students who prefer boating	The number of students who prefer game zones
A	-	420	-
B	580	240	340
C	680	300	380
D	-	390	-

Answer: A

The required percentage = (340/680)*100= 50%

15. Questions

Let the total number of students who prefer boating and game zones in all four classes together be 27T and 25T respectively.

The difference between the total number of students who prefer boating and game zones in all four classes together = 100

27T – 25T = 100

T = 50

The total number of students who prefer boating in all four classes together = 27 * 50 = 1350

The total number of students who prefer game zones in all four classes together = 25 * 50 = 1250

The total number of students who prefer game zones in classes A and D together =265*2= 530

The total number of students who prefer game zones in classes B and C together = 1250 – 530 = 720

Let the number of students who prefer game zones in class B be Y.

And the number of students who prefer game zones in class C = Y+40

Y + (Y + 40) = 720

2Y = 680

Y = 340

The number of students who prefer game zones in class B = 340

The number of students who prefer game zones in class C = 340 + 40 = 380

The number of students who prefer boating in class C =340-40 =300

The number of students who prefer boating in class D = 300 * 130/100 = 390

Let the number of students who prefer boating in classes A and B be 7X and 4X respectively.

The total number of students who prefer boating in classes A and B together = 1350 – (300 + 390) = 660

7X + 4X = 660

X = 60

The number of students who prefer boating in class A= 7X = (7*60) = 420

The number of students who prefer boating in class B = 4X = (4*60) = 240

The total number of students in class B = 240 + 340 = 580

The total number of students in class C = 300 + 380 = 680

Classes	The total number of students	The number of students who prefer boating	The number of students who prefer game zones
A	-	420	-
B	580	240	340
C	680	300	380
D	-	390	-

Answer: B

The total number of students in all four classes together = 1350 + 1250 = 2600

The number of students who prefer game zones in class D = 2600 * 10/100 – 10 = 260 – 10 = 250

The number of students who prefer game zones in class A = 530 – 250 = 280

The number of students who prefer game zones in class F = 280 + 80 = 360

The total number of students in class D = 390 + 250 = 640

Required ratio = 640:360 = 16:9

16. Questions

Answer: A

The interest received by Mani initially = 7800 – 6000 = Rs.1800

(P*X*2)/100 =1800

(6000*X*2)/100 =1800

X = (1800*100)/ (6000*2)

X =15%

(P*Y*2)/100 = 1800 + 480

(6000*Y*2)/100 = 2280

Y = (2280*100)/ (2*6000)

Y = 19%

(2X-Y) = 2*15 -19 = 30-19 =11

Required value= 11 = (X-4)

17. Questions

Answer: D

B started the business with the investment = (3500*140)/100 = Rs.4900

Y = 3500 + 8400 = 8400

The total profit of the business = 1.5 * 8400 – 380 = 12600 – 380 = Rs.12220

The ratio of the profit share of A to B = (12220 – 6370):6370 = 5850:6370 = 45:49

(3500 * X)/(4900*(X-2)) = 45/49

5X/(7(X-2)) =45/49

X/(X-2) =9/7

7X=9X-18

2X =18

X=9

Required value =(2X + 4) = 2 * 9 +4 =22

18. Questions

Answer: A

The difference between the quantity of water in vessels A and C is 15 liters.

The quantity of water in vessel C =15*6/(6-3) = 15*6/3 = 30 liters

The quantity of water in vessel B = 30*4/6 = 20liters

The quantity of milk in vessel C is 3/2 of the water in vessel C.

The quantity of milk in vessel C = (2+1)/2*30 =3/2*30= 45 liters

The quantity of milk in vessel B = 45*7/9 = 35 liters

The total quantity of the mixture in vessel B = (35+20) liters = 55 liters

If 5 liters of water are added to vessel B

The final quantity of the mixture in vessel B = 55+5 =60 liters

19. Questions

Answer: B

(15*N + 20+ 16) =(N+2) * 15(3/41)

(15N+36) = (N+2) * 618/41

615N+1476 = 618N+1236

N = 240/3 = 80

The average weight of 25 donkeys = (125% of 80 – 16) = 100 – 16 = 84 kg

The total weight of 25 donkeys = 25 * 84 = 2100 kg

The total weight of 80 ducks = 80 * 15 = 1200 kg

Required difference = 2100 – 1200 = 900 kg

20. Questions

Answer: C

B got 40% of invalid votes,

C got 36% of invalid votes,

A got 24% of invalid votes=144 votes

The invalid votes of C got = 144 * 36/24 = 216 votes

The total invalid votes polled = 144 * 100/30 = 600

The total number of valid votes polled = 600 * (100 – 30)/30 = (600*70)/30 = 1400 votes

The valid votes of C got =1400*1/5 = 280 votes

The total valid votes A and B together got = 1400 – 280 = 1120

The valid votes of A got = (4*1120)/7 = 640 votes

The valid votes of B got = 1120 - 640 = 480 votes

Required difference = (480-216) = 264 votes

21. Questions

Answer: A

Let x be the length of the rectangle and(x-4) be the breadth of the rectangle.

$2(x + (x − 4)) = 80$

$2x = 44$

$x = 22$ cm

The breadth of the rectangle = 22 – 4 = 18 cm

The length of the rectangle = 22 cm

One of the diagonals of the rhombus, d1 = 22+6 =28cm

Area of the rhombus =252 cm^2

(d1*d2)/2= 252

d2 = (252*2)/28 =18 cm

The shorter diagonal of the rhombus = 18 cm

Required ratio = 18:18 = 1:1

22. Questions

Answer: A

Let the speed of the stream = X km/hr = Half of the difference between the downstream and upstream speed of the boat

The upstream speed of the boat = (X + 4) – X = 4 km/hr

(2X + 14)/4 = 10

2X = 26

X = 13

The downstream speed of the boat = (X + 4) + X = (13 + 4) + 13 = 30 km/hr

(X+7Y)/30 = 3

(13+7Y) = 90

7Y = 90-13

7Y = 77

Y = 11

23. Questions

Answer: A

Let the cost price of the article = 64X – 2100

(64X – 2100) * (100 + 60)/100 * (100 – 20)/100 = 64X

(64X – 2100) * 160/100 * 80/100 = 64X

64X – 50X = 2100

X = 150

The cost price of the article = 64 * 150 – 2100 = 9600 – 2100 = Rs.7500

Required answer = 7500 * 2/3 = Rs.5000

24. Questions

Answer: D

The length of train B = (420*19)/21 = 380 m

The length of train A = 420 m,

Let the speed of trains A and B be 3x and 4x respectively.

(420+380) =(3x + 4x) * 32/7

800 = x * 32

x = 25

The speed of train B = 4*25 =100m/sec

The length of the platform = 420 * 3/4 = 315 m

Required time= (380+315)/100 = 695/100 = 6.95 seconds

25. Questions

Answer: A

Pipe A can fill the tank = 5 * 100/16.67 = 5 * 6/1 = 30 hours

Pipe D can fill the tank = 90 hours

Pipe C can fill the tank = 1/(12 * 3) – 1/90 = 1/36 – 1/90 = (5 – 2)/180 = 3/180 = 60 hours

Pipe B can empty the tank = 22.5 * 2 = 45 hours

The efficiency of Pipe B increased by 80%,

Then, 45*100 = x*180

x = 25

Pipe B alone to empty the tank after the efficiency increase = 25 hours

The total time taken by all of them together to fill the tank = A-B+C =1/30 -1/25 + 1/60 = (10-12+5)/300 = 3/300 = 1/100 =100 hours

26. Questions

Answer: A

72% of 300*0.5 +? = 416÷8 + √81 + 11^2

72/100 *300*0.5 +? = 416/8 + 9 + 121

216 * 0.5 +? = 52 + 9 + 121

$108 + ? = 61 + 121$

$? = 182 - 108$

$? = 74$

27. Questions

Answer: C

$(23 \div 19)$ of $(209 \div 46) + 25\%$ of $60 = ?$

$? = 23/19 * 209/46 + 25/100 * 60$

$? = 11/2 + 15$

$? = 20.5$

28. Questions

Answer: D

$17^2 + 29^2 - 625 = ? * \sqrt{25}$

$289 + 841 - 625 = ? * 5$

$? = 505/5 = 101$

29. Questions

Answer: C

$5728 - 4247 + 9^2 = ?^3 - 166$

$1481 + 81 = ?^3 - 166$

$?^3 = 1728 = 12^3$

$? = 12$

30. Questions

Answer: A

240% of 60% of $3600 - 9? = 27 * 19$

$240/100 * 60/100 * 3600 - 9? = 513$

$9? = 24 * 6 * 36 - 513$

$9? = 5184 - 513$

$? = 4671/9 = 519$

31. Questions

Answer: B

12   30   112   219   542   **914**

+18   +82   +107   +323   +372

+4^3 +5^2 +6^3 +7^2

32. Questions

Answer: E

8   15   31   65   **126**   223

+7   +16   +34   +61   +97

+9   +18   +27   +36

33. Questions

Answer: C

74   155   317   **560**   884   1289

+81   +162   +243   +324   +405

34. Questions

Answer: E

98 + 3.1 * 1 = 101.1

101.1 + 3.1 * 2 = 107.3

107.3 + 3.1 * 3 = 116.6

116.6 + 3.1 * 4 = 129

129 + 3.1 * 5 = 144.5

35. Questions

Answer: B

53 * 2 – 1 = **105**

105 * 2 - 2 = 208

208 * 2 – 3 = 413

413 * 2 – 4 = 822

822 * 2 – 5 = 1639

36. Questions

Answer: A

$2x^2$-15x+28= 0

$2x^2$ -8x – 7x +28= 0

2x(x-4) – 7(x -4) = 0

$(2x - 7) (x - 4) = 0$

$x = +7/2, +4 = +3.5, +4$

$3y^2 + 24y - 27 = 0$

$3y^2 - 3y + 27y - 27 = 0$

$3y(y-1) + 27(y-1) = 0$

$(3y + 27)(y - 1) = 0$

$y = -9, +1$

Hence, $x > y$

37. Questions

Answer: D

$5x^2 - 16x - 16 = 0$

$5x^2 - 20x + 4x - 16 = 0$

$5x(x-4) + 4(x - 4) = 0$

$(5x + 4)(x - 4) = 0$

$x = -4/5, +4 = -0.8, +4$

$4y^2 - 5y - 9 = 0$

$4y^2 + 4y - 9y - 9 = 0$

$4y(y+1) - 9(y+1) = 0$

$(4y-9)(y+1) = 0$

$y = +9/4, -1$

Hence, $x = y$ or relation cannot be established

38. Questions

Answer: B

$2x + 31y = -7x + 347$

$9x + 31y = 347 --- (1)$

$4x + 9y = 116 --- (2)$

By solving equations (1) * 4 and (2) * 9,

$36x + 124y = 1388$

$36x + 81y = 1044$

$y = 344/43 = 8$

$x = (347 - 31 * 8)/9 = 99/9 = 11$

Hence, $x > y$

39. Questions

Answer: E

$x^2 -46x+129= 0$

$x^2 -43x - 3x +129= 0$

$x(x-43)-3(x -43) = 0$

$(x - 3) (x -43) = 0$

$x = +3, +43$

$2y^2 -19y-46= 0$

$2y^2 +4y-23y-46= 0$

$2y(y+2) - 23(y+2)=0$

$(2y - 23)(y + 2) = 0$

$y= +23/2, -2$

Hence, $x = y$ or relation cannot be established

40. Questions

Answer: A

$3x^2 -31x+50 = 0$

$3x^2 -6x -25x+50= 0$

$3x(x-2)-25(x -2) = 0$

$(3x - 25) (x -2) = 0$

$x =+25/3, +2$

$4y^2 +37y+75= 0$

$4y^2 +12y+25y+75= 0$

$4y(y+3) +25(y+3) =0$

$(4y + 25)(y + 3) = 0$

$y= -25/4, -3$

Hence, $x > y$