IBPS SO PRELIMS

Question Paper 2017

Quantitative Aptitude (Questions and Solutions)

Q. (1) Three vessels contain alcoholic solutions with the concentrations of alcohol as 0.25, 0.5 and 0.75 respectively. 4 litres from the first, 6 litres from the second and 8 litres from the third are mixed. What is the ratio of alcohol and water in the resultant mixture?

1. 1:2
2. 1:3
3. 1:1
4. 5:9
5. 5:4

Answer: 4

Solution: The concentration of alcohol in the resulting mixture

= (4 x 0.25) + (6 x 0.5) + (8 x 0.75)

= 1 + 3 + 6

= 10

Therefore, the ratio of alcohol and water in the resultant mixture = 10 / (4 + 6 + 8)

= 10 / 18

= 5/9

Q. (2) 10 years ago, a father was twice of his elder son and the difference of their present ages is 15 years. If the younger son is 3 years smaller than the elder one then the present age of the younger son is:

1. 22
2. 38
3. 35
4. 36
5. 25

Answer: 1

Solution: Let the present age of the father be X years and that of the elder son be Y years.

Therefore, according to the question,

X -10 = 2(Y - 10)

⇒ X = 2Y - 20 + 10

⇒ X = 2Y - 10_____(1)

Also, X - Y = 15

⇒ X = 15 + Y_____(2)

Solving equation (1) and (2), we get,

2Y - 10 = 15 + Y

⇒ Y = 25 years

X = 15 + 25 = 40 years

Hence, the present age of the younger son = 25 - 3 = 22 years.

Q. (3) A grocer has a sale of Rs.3250, Rs.2955, Rs.3682 and Rs.4943 respectively from January to April. He has a sale for further next three months to get an average sale of Rs.3096. If he has the sale in ratio 1: 2: 1 for the next three months, what will be the difference between the sales in the month of March and July?

1. 989
2. 1060
3. 1971.5
4. 1220
5. None of these

Answer: 3

Solution: As per the given ratio 1: 2: 1, let the sale in the months of May, June and July be y, 2y and y respectively.

Given, Sale on January = Rs.3250

Sale on February = Rs.2955

Sale on March = Rs.3682

Sale on April = Rs.4943

Therefore, according to the question,

3096 x 7 = 3250 + 2955 + 3682 + 4943 + y + 2y + y

⇒ 4y = 21672 - 14830

⇒ y = 6842 / 4 = 1710.5

Hence, the difference between sale on March and July = 3682 – 1710.5 = Rs.1971.5

Q. (4) The average weight of a group of 10 boys is 50.8 kg. The individual weight of six of them is equal. The seventh boy has a weight equal to 98% of the individual weight of first six boys and 8th, 9th and 10th boy has a weight 4%, 6% and 8% more than the individual weight of first six boys. Find the average weight of the group when two new boys of weights 54 kg and 56 kg respectively join the group and six boys having equal weights leave the group.

1. 54 kg
2. 53.5 kg
3. 53 kg 4.
52.5 kg
5. None of these

Answer:

Solution: Let x be the individual weight of the first six boys.

Total weight of six boys = 6x

Weight of 7th boy = 98x/100

Weight of 8th boy = 104x/100

Weight of 9th boy = 106x/100

Weight of 10th boy = 108x/100

Therefore, according to the question,

50.8 x 10 = 6x + 98x/100 + 104x/100 + 106x/100 + 108x/100

⇒ 508 = 10.16x

⇒ x = 50 kg

Now, weight of 7th boy = (98 x 50) /100 = 49 kg

Weight of 8th boy = (104 x 50) /100 kg = 52

Weight of 9th boy = (106 x 50) /100 = 53 kg

Weight of 10th boy = (108 x 50) /100 = 54 kg

Hence, the average weight of the group when two new boys of weights 54 kg and 56 kg respectively join the group and six boys having equal weights leave the group

= (49 + 52 + 53 + 54 + 54 + 56) / 6

= 53 kg

Q. (5) Mixture X and Mixture Y contain 35 litres and 50 litres respectively of mixtures of liquids A and B in different proportions. Quantity of liquid A in mixture X is 15 litres less than the quantity of liquid A in mixture Y. The total quantity of liquid B in both the mixtures is 30 litres. If 20% of the liquid is taken from mixture X and put into mixture Y, then what will be the ratio of liquid A to liquid B in mixture Y?

1. 6: 13
2. 1: 2
3. 7: 3
4. 13: 6
5. Cannot be determined

Answer: 4

Solution:

Given, total quantity of liquid B in both mixtures = 30 litres

Let the quantity of liquid A in mixture X = x litres

Therefore, the quantity of liquid A in mixture Y = x + 15 litres

Hence, x + (x + 15) + 30 = 50 + 35

⇒ 2x = 40

⇒ x = 20 litres

Therefore, quantity of liquid A in mixture X = 20 litres

Quantity of liquid A in mixture Y = 20 + 15 = 35 litres Now,

quantity of liquid B in mixture X = 35 – 20 = 15 litres

Quantity of liquid B in mixture Y = 15 litres

Thus, required ratio = (35 + 20% of 20): (15 + 20% of 15)

= (35 + 4): (15 + 3) = 39: 18 = 13: 6

Q. (6) A shopkeeper sold an article of marked price Rs. 2200 after giving two successive discounts of x% and y%. If the shopkeeper sold the article at Rs. 1881 and the second discount percentage is twice the first discount percentage, then find the value of x.

1. 8%
2. 7.25%
3. 6.33%
4. 5%
5. None of these

Answer:

Solution:

Marked price of the article = Rs. 2200

Selling price of the article = Rs. 1881

Overall discount = 2200 – 1881

= Rs. 319

Therefore, overall discount percent = (319/2200) x 100%

= 14.5%

Since the successive discounts are x% and y%

Therefore, the overall discount = (x + y) - xy/100

$\Rightarrow 14.5 = (x + 2x) - (x.2x / 100)$

$\Rightarrow 14.5 = 3x - (2x^2/100)$

$\Rightarrow 1450 = 300x - 2x^2$

$\Rightarrow x^2 - 150x + 725 = 0$

$\Rightarrow x^2 - 5x - 145x + 725 = 0$

$\Rightarrow x (x - 5) - 145 (x - 5) = 0$

$\Rightarrow (x - 5) (x - 145) = 0$

So, x = 5 or x = 145

Since, x = 145% discount is not possible

Hence, x = 5%

Direction Q. (7 - 11): In each question, two equations numbered I and II are given. You have to solve both the equations and mark the answer:

Q. (7)

I. $10x^2 + 37x + 30 = 0$

II. $y^2 + 21y + 80 = 0$

1. $x > y$
2. $x < y$
3. $x = y$ or no relation is obtained
4. $x \geq y$
5. $x \leq y$

Answer: 1

Solution:

I $\Rightarrow$ **$10x^2 + 37x + 30 = 0$**

$\Rightarrow 10x^2 + 12x + 25x + 30 = 0$

$\Rightarrow 2x(5x + 6) + 5(5x + 6) = 0$

$\Rightarrow (2x + 5)(5x + 6) = 0$

$\Rightarrow x = -5/2, -6/5$

II $\Rightarrow$ **$y^2 + 21y + 80 = 0$**

$\Rightarrow y^2 + 16y + 5y + 80 = 0$

$\Rightarrow y(y + 16) + 5(y + 16) = 0$

$\Rightarrow (y + 16)(y + 5) = 0$

$\Rightarrow y = -16, -5$

Hence, $x > y$

Q. (8)

I. $x^2 - 11x + 10 = 0$

II. $y^2 + 6y - 7 = 0$

1. $x > y$
2. $x < y$
3. $x = y$ or no relation is obtained
4. $x \geq y$
5. $x \leq y$

Answer: 1

Solution:

I ⇒ **$x^2 - 11x + 10 = 0$**

⇒ $x^2 - 10x - x + 10 = 0$

⇒ $x(x - 10) - 1(x - 10) = 0$

⇒ $(x - 10)(x - 1) = 0$

⇒ $x = 10, 1$

II ⇒ **$y^2 + 6y - 7 = 0$**

⇒ $y^2 - 7y + y - 7 = 0$

⇒ $y(y - 7) + (y - 7) = 0$

⇒ $(y - 7)(y + 1) = 0$

⇒ $y = 7, -1$

Hence, $x > y$

Q. (9)

I. $x^2 + 22x + 72 = 0$ II. $15y^2 + 77y + 90 = 0$

1. $x > y$
2. $x < y$
3. $x = y$ or no relation is obtained

4. $x \geq y$
5. $x \leq y$

Answer: 2

Solution:

I ⇒ $\mathbf{x^2 + 22x + 72 = 0}$

⇒ $x^2 + 18x + 4x + 72 = 0$

⇒ $x(x + 18) + 4(x + 18) = 0$

⇒ $(x + 18)(x + 4) = 0$

⇒ $x = -18, -4$

II ⇒ $\mathbf{15y^2 + 77y + 90 = 0}$

⇒ $15y^2 + 50y + 27y + 90 = 0$

⇒ $5y(3y + 10) + 9(3y + 10) = 0$

⇒ $(5y + 9)(3y + 10) = 0$

⇒ $y = -9/5, -$

$10/3$ Hence, $x <$

y

Q. (10)

I. $x^2 + 31x + 234 = 0$

II. $y^2 - 9y - 22 = 0$

1. $x > y$
2. $x < y$
3. $x = y$ or no relation is obtained
4. $x \geq y$
5. $x \leq y$

Answer: 2

Solution:

I ⇒ $x^2 + 31x + 234 = 0$

⇒ $x^2 + 18x + 13x + 234 = 0$

⇒ $x (x + 18) + 13 (x + 18) = 0$

⇒ $(x + 18) (x + 13) = 0$

⇒ $x = -18, -13$

II ⇒ $y^2 - 9y - 22 = 0$

⇒ $y^2 - 11y + 2y - 22 = 0$

⇒ $y (y - 11) + 2 (y - 11) = 0$

⇒ $(y - 11) (y + 2) = 0$

⇒ $y = 11, -2$

Hence, $x < y$

Q. (11)

I. $x^2 + 17x - 168 = 0$

II. $y^2 - 32y + 255 = 0$

1. $x > y$
2. $x < y$
3. $x = y$ or no relation is obtained
4. $x \geq y$
5. $x \leq y$

Answer: 2

Solution:

I ⇒ **$x^2 + 17x - 168 = 0$**

⇒ $x^2 - 7x + 24x - 168 = 0$

⇒ $x(x - 7) + 24(x - 7) = 0$

⇒ $(x + 24) (x - 7) = 0$

⇒ $x = -24, 7$

II ⇒ $\mathbf{y^2 - 32y + 255 = 0}$

⇒ $y^2 - 17y - 15y + 255 = 0$

⇒ $y(y - 17) - 15(y - 17) = 0$

⇒ $(y - 15)(y - 17) = 0$

⇒ $y = 15, 17$

Hence, $x < y$

Q. (12) A basketball team of 5 players is to be selected from a group of 10 men and 8 women players. A volleyball team of 6 players is to be selected from a group of 8 men and 7 women players. Find the difference in the number of ways in which both the teams are selected, given that each team has only 2 female players.

1. 1890
2. 1920
3. 1950
4. 1990
5. None of these

Answer: 1

Solution: Number of ways in which the basketball team is selected = ${}^{10}C_3 \times {}^{8}C_2$

= [(10 x 9 x 8) / (3 x 2 x 1)] x [(8 x 7) / (2 x 1)]

= 120 x 28

= 3360

Number of ways in which the volleyball team is selected = ${}^{8}C_4 \times {}^{7}C_2$

= [(8 x 7 x 6 x 5) / (4 x 3 x 2 x 1)] x [(7 x 6) / (2 x 1)]

= 70 x 21

= 1470

Required difference = 3360 - 1470

= 1890

Direction Q. (13 - 17): In the following number series, only one number is missing. Find out the missing number.

Q. (13) 1, 2, 15, 100, 749, ?

1. 7017
2. 6671
3. 6627
4. 6893
5. 6822

Answer: 5

Solution: The pattern of the given series is:

- $(1 \times 1) + 1^2 = 2$
- $(2 \times 3) + 3^2 = 15$
- $(15 \times 5) + 5^2 = 100$
- $(100 \times 7) + 7^2 = 749$
- $(749 \times 9) + 9^2 = 6822$

Q. (14) 17, 35, 107, 538, 3770, ?

1. 41475
2. 41321
3. 41608
4. 41640
5. 41617

Answer: 1

Solution:

The pattern of the given series is:

- 17 x 2 + 1 = 35
- 35 x 3 + 2 = 107
- 107 x 5 + 3 = 538
- 538 x 7 + 4 = 3770
- 3770 x 11 + 5 = 41475

Q. (15) 24, 95, 616, 5463, 59972, ?

1. 779406
2. 779522
3. 779602
4. 779637
5. 779467

Answer: 5
Solution: The pattern of the series is as follows:

- (24 - 5) x 5 = 95
- (95 - 7) x 7 = 616
- (616 - 9) x 9 = 5463
- (5463 - 11) x 11 = 59972
- (59972 - 13) x 13 = 779467

Q. (16) 30155, 25243, 21149, 17777, 15037, ?

1. 12845
2. 12780
3. 12692
4. 13035
5. 12787

Answer: 1
Solution: The pattern of the series is as follows:

- $30155 - 17^3 + 1 = 25243$
- $25243 - 16^3 + 2 = 21149$
- $21149 - 15^3 + 3 = 17777$
- $17777 - 14^3 + 4 = 15037$
- $15037 - 13^3 + 5 = 12845$

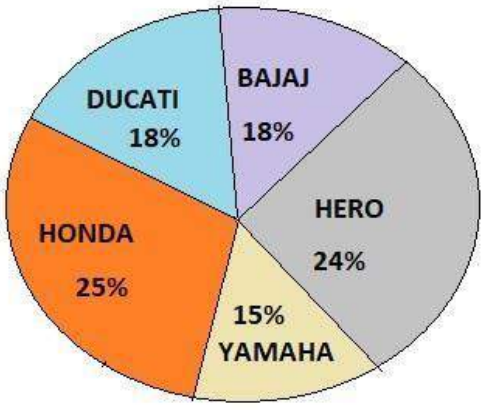
Q. (17) 90, 154, 254, 398, 594, ?

1. 973
2. 850
3. 721
4. 943
5. 670

Answer: 2
Solution: The series follows the following pattern:

- $90 + 8^2 = 154$
- $154 + 10^2 = 254$
- $254 + 12^2 = 398$
- $398 + 14^2 = 594$
- $594 + 16^2 = 850$

Direction Q. (18 - 22): Answer the questions based on the information given below:
The given pie chart shows the percentage distribution of total number of bikes sold by five different companies in a year. All companies sell only two variants of bikes namely 'Standard' and 'Cruiser'. The total number of bikes sold by these companies in a year = 36000



The above pie chart shows the percentage distribution of bikes of different bikes.

Q. (18) Ratio of the number of Standard Bikes sold to the number of Cruiser Bikes sold by Bajaj is 11:7; respectively while the ratio of the number of Standard Bikes sold to the number of Cruiser Bikes sold by Hero is 11: 16, respectively. Find the ratio between Cruiser bikes sold by Bajaj and Cruiser Bikes sold by Hero.

1. 20: 19
2. 63: 128
3. 22: 15
4. 18: 7
5. 23: 18

Answer: 2

Solution: Total number of bikes sold by Bajaj = 0.18 x 36000 = 6480

Total number of bikes sold by Hero = 0.24 x 36000 = 8640

Therefore, number of Cruiser Bikes sold by Bajaj = [7/ (11 + 7)] x 6480 = 7 x 360 = 2520

Number of Cruiser Bikes sold by Hero = [16 / (11 + 16)] x 8640 = 16 x 320 = 5120

Therefore, required ratio = 2520 / 5120 = 63 / 128

Q. (19) The ratio of the number of Standard Bikes sold by Bajaj to the number of Standard Bikes sold by Honda is 4:7; respectively. If the number of Cruiser Bikes sold by Bajaj is equal to the number of Cruiser Bikes sold by Honda, then find the difference between the total number of Standard bikes sold by Honda and Cruiser bikes sold by Bajaj.

1. 2400
2. 2520
3. 2760
4. 3120
5. 648

Answer: 3

Solution:

Total number of bikes sold by Bajaj = 0.18 x 36000 = 6480

Total number of bikes sold by Hero = 0.24 x 36000 = 8640

Let the number of Cruiser Bikes sold by Bajaj and the number of Cruiser Bikes sold by Honda be x each.

So, (6480 - x) / (9000 - x) = 4/7

⇒ 45360 – 7x = 36000 – 4x

⇒ x = 3120

Number of Standard bikes sold by Honda = 9000 – 3120 = 5880

Therefore, required difference = 5880 – 3120 = 2760

Q. (20) Find the average of the total number of bikes sold by Yamaha, Honda and Ducati. 1. 9630

2. 6090
3. 3690
4. 6960
5. 9360

Answer: 4

Solution:

Total number of bikes sold by Honda = 0.25 x 36000 = 9000 Total number of bikes sold by Yamaha = 0.15 x 36000 = 5400 Total number of bikes sold by Ducati = 0.18 x 36000 = 6480 Therefore, required average = (9000 + 5400 + 6480) / 3 = 6960

Q. (21) The ratio of Standard Bikes to Cruiser Bikes sold by Ducati is 4: 5 respectively and the ratio of selling price of the Standard Bikes to Cruiser Bikes of Ducati is 1: 4 respectively. The amount earned by Ducati on selling all Cruiser bikes is Rs. 450 Cr. Find the price of one Ducati Standard Bike.

1. Rs. 12.5 Lakhs
2. Rs. 3.125 Lakhs
3. Rs. 1.5 Lakhs
4. Rs. 2.5 Lakhs
5. Rs. 4.25 Lakhs

Answer: 2

Solution: Total number of bikes sold by Ducati = 0.18 x 36000 = 6480
Number of Cruiser bikes sold by Ducati = [5 / (4 + 5)] x 6480 = 3600 Price of one Ducati Cruiser Bike = 450 / 3600 = Rs. 12.5 lakhs Therefore, the price of one Standard Bike = Rs. 12.5/4 = Rs. 3.125 lakhs

Q. (22) Find the central angle subtended by Ducati and Yamaha together? 1. 110
2. 115
3. 105
4. 117
5. 119

Answer: 5

Solution:
Percentage share of Ducati Bike = 18%
Percentage share of Yamaha Bike = 15%
Therefore, total percentage share = 18% + 15% = 33% Total share = 100%
Also, we know that 100% = 360 degree So,
33% = (360 / 100) x 33 = 118.8 ≅ 119

Q. (23) A fruit seller has three different varieties of fruits viz. apples, oranges and grapes. He has total 2840 kg fruits in which 25% are grapes, 20% of remaining are oranges. If he sells apples, oranges and grapes per kg in the ratio 5 : 3 : 4 and the cost of 1kg of grapes is Rs.100, then find the total cost of all the apples.

1. 225465
2. 213000
3. 267500
4. 213445
5. None of these

Answer:

Solution:

Total quantity of grapes = 25/100 x 2840 = 710 kg

Total quantity of oranges = 20/100 x (2840 - 710) = 426 kg

Therefore, total quantity of apples = 2840 – (710 + 426) = 1704

Cost of one apple = 5/4 x 100 = 125

Therefore, the total cost of all apples = 125 x 1704 = 213000

Q. (24) A alone can do a work in 20 days. B is 125% more efficient than A. A and B started working and worked for 4 days. If C alone completed the remaining job in 22 days. How many days C alone takes to complete the entire job?

1. 30
2. 35
3. 40
4. 42
5. 45

Answer: 3

Solution: A alone can do a work in 20 days.

Efficiency ratio of A & B= 4 : 5

Ratio of the time required = 5:4

Hence, B alone can do a work in 16 days.

Assume work size = 80 units

1 day work of A = 4 units

1 day work of B = 5 units

Work done by both in 4 days = 4 x (5 + 4) = 36 units

Work left = 80 - 36 = 44 units

Now, C takes 22 days to complete 44 units.

Hence time taken by C alone to complete the work = 40 days

Q. (25) A pump can be used for filling as well as for emptying a tank. The capacity of the tank is $3000m^3$. The emptying capacity of tank is $15m^3$ per minute higher than its filling capacity and the pump needs 10 minutes lesser to empty the tank than it need to fill it. What is the emptying capacity of the tank?

1. 80
2. 40
3. 50
4. 75
5. 55

Answer: 4

Solution: Let the filling capacity of the tank = x m^3 and the emptying capacity = (x + 15) m^3

Therefore, $3000/x - 3000/(x + 15) = 10$

$\Rightarrow 3000x + 45000 - 3000x = 10x(x + 15)$

$\Rightarrow 45000 = 10x^2 + 150x$

$\Rightarrow x^2 + 15x - 4500 = 0$

$\Rightarrow x = 60, -75$

x = -75 is not possible

Hence, emptying capacity = x + 15 = 75 m^3

Q. (26) Ramu divided some marbles among his two sons such that his elder son got more marbles than his younger son. The sum of the cubes the number of marbles with his sons was 21 times the product of the difference of the squares of the number of marbles and the difference of the number of marbles with them. Find the ratio of the number of marbles with his elder and younger sons

1. 6:5
2. 5:3
3. 3:2
4. 5:4
5. None of these

Answer: 4

Solution: Let the number of marbles received by Ramu's elder son be x and that by the younger sons be y.

Given, x > y

Therefore, according to the question,

$x^3 + y^3 = 21 (x^2 – y^2) (x - y)$

Dividing by x + y, we get,

$x^2 - xy + y^2 = 21x^2 – 42xy + 21y^2$

$\Rightarrow 20x^2 – 41xy + 20y^2 = 0$

$\Rightarrow (5x – 4y)(4x – 5y) = 0$

Since, x > y, hence, x/y = 5/4

Q. (27) Two trains of length 200 m and 250 m respectively are running in opposite directions on parallel tracks. if their speed be 45 km per hour and 50 km per hour respectively, in what time will they cross each other?

1. 20 sec
2. 30 sec
3. 14 sec
4. 15 sec
5. Can't be determined

Answer: 3

Solution:

Length of 1st train = 200m

Speed of 1st train = 45 km/h

= 45 × 5/18 = 12.5 m/s

Length of 2nd train=250 m

Speed of 2nd train = 50km/h = 13.88 m/s = 14 m/s

Then total Length = 200 + 250 = 450 m

Total speed =12.5 + 14 = 26.5 m/s

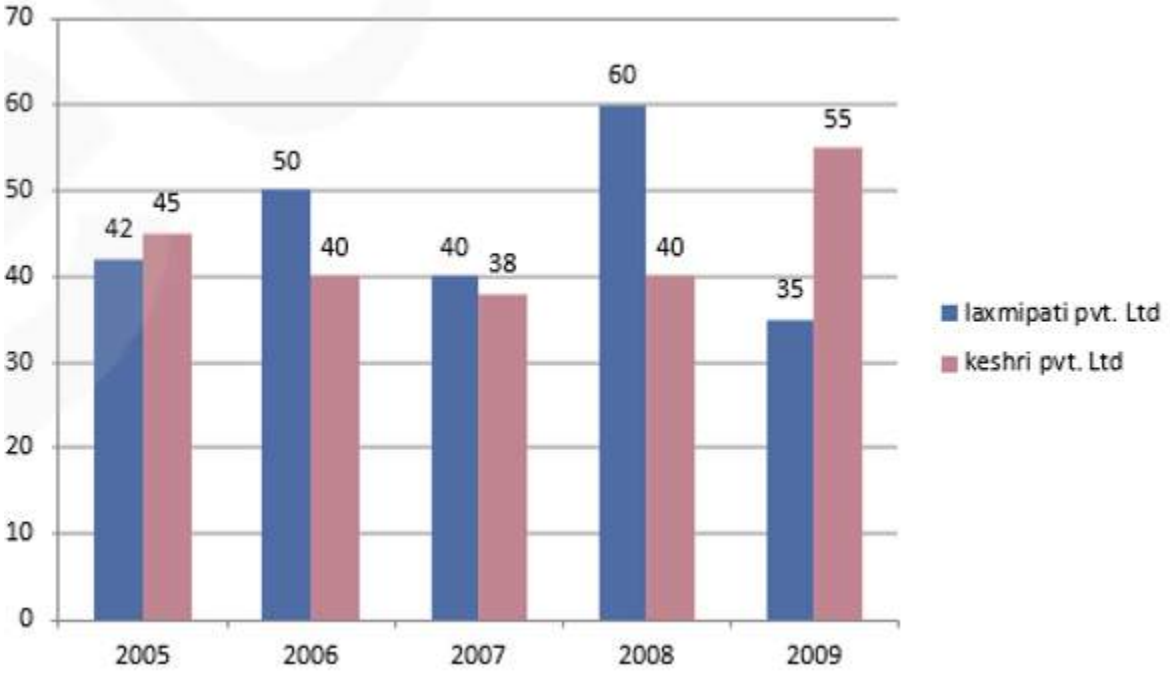
Time = Length/speed

Time = 450/26.5

Time = 13.98 seconds = 14 seconds (approx.)

Direction Q. (28 - 32): Study the following graph carefully and answer the questions given below:

Percentage net profit of two companies over the years.



Q. (28) If the total income in 2007 for company laxmipati Pvt Ltd was Rs. 140 crores, what was the expenditure in that year?

1. 100 crores
2. 110 crores
3. 98 crores
4. 111 crores
5. None of these

Answer: 1

Solution: Percentage of profit = (income - expenditure) / expenditure

⇒ 40 = (140 – E) x 100 / E

⇒ 140 – E = 40E / 100

⇒ 700 = 7E

⇒ E = 100 crores

Q. (29) If the total expenditure of company keshri Pvt. Ltd. in 2005 was Rs. 150 crores, what was the total income?

1. 281 crores

2. 271 crores
3. 217.5 crores
4. 218 crores
5. None of these

Answer: 4

Solution: Income = expenditure (100 + profit %) /100

= 150(100 + 45%) / 100 crores
= 217.5 crores ≅ 218 crores

Q. (30) By what percent keshri Pvt. Ltd income of 2009 is more than that of expenditure of laxmi Pvt. Ltd. of 2008 if profit of keshri Pvt Ltd IN 2009 is equal to 110 crores and profit of laxmi Pvt. Ltd. in 2008 is equal to 120 crores.

1. 55 %
2. 65 %
3. 45 %
4. 75 %
5. None of these

Answer: 1

Solution:

Income of Keshri Pvt. Ltd in 2009 = (155/55) x 110 = 2 x 155

Expenditure of Laxmi Pvt. Ltd. in 2008 =(120/60) x 100 = 2 x 100

Hence, required percentage = [{(2 x 155) - (2 x 100)} / (2 x 100)] x 100 = 55%

Q. (31) Find the approximate profit of laxmipati Pvt. Ltd. of 2005, if profit of keshri Pvt. Ltd. of 2008 is 236 crores and income of keshri pvt Ltd. in 2008 is equal to expenditure of laxmipati pvt ltd in 2005.

1. 374 crores
2. 347 crores
3. 312 crores
4. 311 crores
5. 340 crores

Answer: 2

Solution:

Income of keshri pvt Ltd. in 2008 = 140% of Expenditure

Given 40% of expenditure = 236 crore

Therefore, 140% of expenditure = (236 x 140) / 40 = 826 crore

As, income of keshri pvt Ltd. in 2008 = expenditure of laxmipati pvt ltd in 2005 Therefore,

profit of laxmipati Pvt. Ltd. in 2005 = 42% of 826 = 347 crores (approx.)

Q. (32) By what approximate percent keshri Pvt. Ltd profit of 2009 is more than that of2008. 1.

27%

2. 38%
3. 29%
4. 30%
5. None of these

Answer: 2

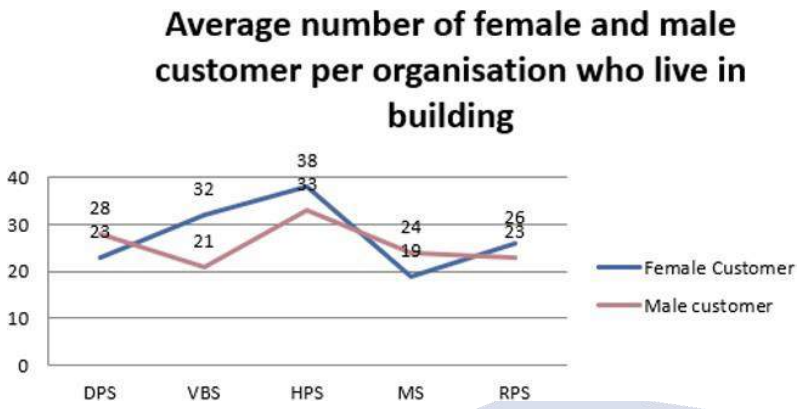
Solution: Required percent = [(55 – 40) / 40] x 100%

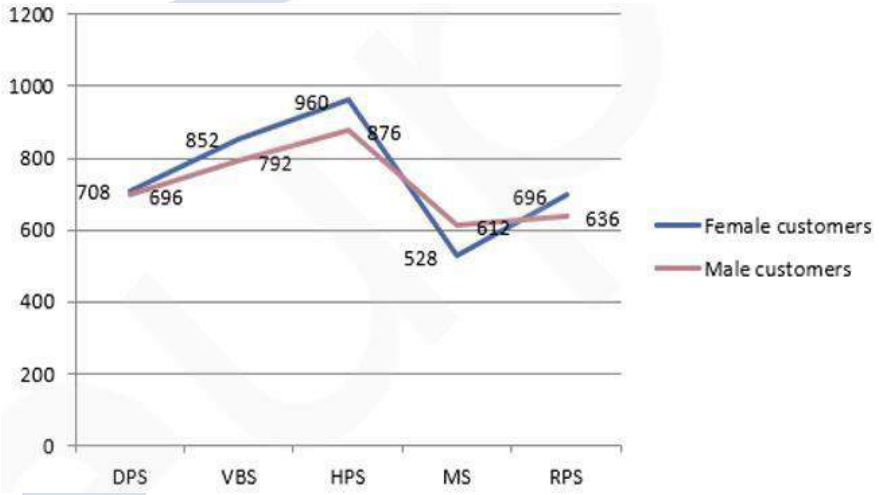
= 37.5% ≅ 38%

Direction Q. (33 - 37): Answer the questions based on the information given below:

The first line graph represents the average number of female customers and male customers per organisation who live in building of five different headquarters.

The second line graph represents the total number of female customers and male customers in five different headquarters.





- There are a total of 12 organisations in each headquarters.
- Total number of customers in headquarters = Number of customers who live in building + number of part timers.

Q. (33) What is the difference between the number of part timers' male customers and the number of part timers' female customers in VBS?

1. 42
2. 48
3. 45
4. 37
5. 51

Answer: 2

[The number of part timers male customers in VBS = 420

The number of part timers female customers in VBS = 468

Required difference = 468 – 420 = 48]

Q. (34) What is the average number of customers per organisation who are part timers' in RPS? 1. 58

2. 71
3. 74
4. 62
5. 67

Answer: 4

[The number of female customers who are part timers in RPS = 384 The number of male customers who are part timers in RPS = 360

Required average = (384 + 360) / 12 = 62]

Q. (35) What is the ratio of the number of male customers who are part timers in DPS to the number of male customers who are part timers in HPS?

1. 3: 4
2. 2: 3
3. 4: 5
4. 3: 1
5. None of these

Answer: 1

[The number of male customers who are part timers in DPS = 360

The number of male customers who are part timers in HPS = 480

Required ratio = 360/480 = 3/4]

Q. (36) Find the percentage of the number of female customers who are part timers in MS with respect to the number of male customers who are part timers in the same headquarters.

1. 102.2%
2. 84.3%
3. 89.2%
4. 95.7%
5. 92.6%

Answer: 5
[The number of female customers who are part timers in MS = 300
The number of male customers who are part timers in MS = 324
Required percentage = 300 / 324 x 100% = 92.6%]

Q. (37) Find the difference between the total number of female customers who live in building in all the five headquarters together and the total number of male customers who live in building in all the five headquarters together.

1. 16
2. 19
3. 12
4. 7
5. 26
6.

Answer: 3
[The number of female customers who live in building = 276 + 384 + 456 + 228 + 312
=1656
The number of male customers who live in building = 336 + 372 + 396 + 288 + 276
=1668
Required difference = 1668 - 1656 = 12]

Solution Q. (33 - 37):

	Number of female customers live in building	Number of male customers live in building	Number of female customers who are part timers	Number of male customers who are part timers
DPS	23 x 12 = 276	28 x 12 = 336	708 – 276 = 432	696 – 336 = 360
VBS	32 x 12 = 384	31 x 12 = 372	852 – 384 = 468	792 – 372 = 420
HPS	38 x 12 = 456	33 x 12 = 396	960 – 456 = 504	876 – 396 = 480
MS	19 x 12 = 228	24 x 12 = 288	528 – 228 = 300	612 – 288 = 324
RPS	26 x 12 = 312	23 x 12 = 276	696 – 312 = 384	636 – 276 = 360

Direction Q. (38 - 42): Study the following information to answer the questions.

In TATA group there are 5200 employees in five different subsidiary companies – TATA Retail, TATA Life, TATA Logistic, TATA Solar and TATA Steel. Out of the total number of female employees in the organization, 27% work in TATA Retail, 22% work in TATA Logistic, 16% work in TATA Life and the remaining 840 female employees in TATA Solar. Out of the total male employees in the group, 14% work in TATA Retail, 30% work in TATA Logistic, 25% work in TATA Life, 11% work in the TATA Solar and the remaining employees work in TATA Steel.

Q. (38) Find the total number of male employees in these three subsidiaries is TATA Retail, TATA Life and TATA Logistic?

1. 1032
2. 1932
3. 1664
4. 1200
5. 1654

Answer: 2

[The total number of male employees in these three subsidiaries = 392 + 700 + 840 = 1932]

Q. (39) The total number of male employees working in TATA Life and TATA Logistic together is what % of the total number of employees working in these two firms?

1. 52.47%
2. 62.8%

3. 68.8%
4. 50.8%
5. 64.6%

Answer: 2

[Total number of male employees working in TATA Life and TATA Logistic = 1540
The total number of employees working in these two firms = 2452
Hence, required % = (1540 / 2452) x 100 = 62.8%]

Q. (40) What is the approx. average number of employees (male and female) who work in TATA Logistic, TATA Solar and TATA Steel together?

1. 1044
2. 1120
3. 1025
4. 986
5. 1004

Answer: 3

[The approx. average number of employees (male and female) who work in TATA Logistic, TATA Solar and TATA Steel together = (560 + 840 + 528 + 308 + 840) / 3
= 3076 / 3 = 1025]

Q. (41) If 10 % male of TATA Steel leave the job and exact number of females join the TATA Life in place of those male employees who left the job. What is the total number of female employees in TATA Life?

1. 440
2. 520
3. 480
4. 580
5. None of these

Answer: 1

[10 % male of TATA Steel = 560*10/100 = 56

The total number of female employees in TATA Life = 56 + 384 = 440]

Q. (42) What percentage of male employees is more or less than female employees? 1. 18.46
2. 19.66
3. 20.23
4. 14.56
5. 16.66

Answer: 5

[Required % = [(2800 - 2400) / 2400] x 100 = 16.66%

Solution Q. (38 - 42):

Company	**Male**	**Female**
Tata Retail	392	648
Tata Life	700	384
Tata Logistic	840	528
Tata Solar	308	840
Tata Steel	560	0
TOTAL	2800	2400

Number of female employees in TATA Solar = 840

Percentage of female employees in TATA Solar = 100 x (27 + 22 + 16) = 35% 35% = 840

100% = 2400

Therefore, total female employees = 2400

And total male employees = 5200 - 2400 = 2800

Q. (43) When boatman A travels from point X to Y then the river has no speed of stream. He covers half the distance at a speed of 21 km/hr and the rest with a speed of 'x' km/hr which took him an overall time of 2 hours and 24 minutes. When boatman B travels from point X to Y with the speed of boat as 21 km/hr then the river has a speed of stream of 3 km/hr and he has to travel the entire distance at upstream. If boatman B took 2 hours and 20 minutes to cover the distance then find the value of'x'.

1. 12 km/hr
2. 14 km/hr
3. 15 km/hr
4. 16 km/hr
5. None of these

Answer: 3

Solution:

Let, the distance between point X and point Y be'd' km

For boatman A,

(0.5d/21) + (0.5d/x) = 2.4

For boatman B, Upstream speed = 21 – 3 = 18 km/hr

So, d/18 = 2 + (20/30)

⇒ d/18 = 7/3

⇒ d = 42km

Now, putting the value of d, we get,

[(0.5 x 42) / 21] + [(0.5 x 42) / x] = 2.4

⇒ 21/21 + 21/x = 2.4

⇒ 1 + 21/x = 2.4

⇒ x = 1.4/21

⇒ x = 15 km/hour

Q. (44) 12 men can complete a work in 10 days. 20 women can complete the same work in twelve days. 8 men and 4 women started working together and after 6 days, 11 more women joined them. What are the total numbers of days required to complete the whole work?

1. 10 27/31 days
2. 11 2732 days
3. 9 12/13 days

4. 9 27/31 days
5. None of these

Answer: 4

Solution: 12 men can complete a work in 10 days.

Hence, the amount of work done by 1 man = 1/120

Similarly, work done by one woman = 1/240

Total work done by 8 men and 4 women in 6 days
= 6 x (8/120 + 4/240)

= ½

From 7th day, the amount of work done on one day = 8/120 + 15/240 = 31/240

Hence, the time taken to complete the work = ½ ÷ 31/240

= 240/62

= 3 27/31 days

Hence, the total time taken = 6 + (3 27/31) = 9 27/31 days

Q. (45) A man spends 20% of his monthly income on rent. Out of the remaining monthly income, he spends 25% on food, Rs. 'a' on transportation and the remaining money is deposited in the savings account which is 48% of the total monthly salary. If the amount is deposited for 5 years in the savings account he gets a simple interest of Rs. 8294.4 at the rate of 7.2% per annum, then find the value of 'a'.

1. Rs. 6240
2. Rs. 7280
3. Rs. 5760
4. Rs. 6860
5. None of these

Answer:

Solution:

Let, the total monthly income be Rs. 'y'

Amount spent on rent = Rs. 0.2y Remaining

monthly income = Rs. 0.8y Amount spent on

food = 0.25 x 0.8y = 0.2y

Amount deposited on savings account = Rs. 0.48y

So, 0.2y + 0.2y + a + 0.48y = y

⇒ a = 0.12y

⇒ a = 12% of x

Now, 8294.4 = (0.48y x 7.2 x 5) / 100

⇒ 829440 = 17.28y

⇒ y = Rs. 48000

So, a = 12% of x = Rs. 5760

Directions Q. (46 - 50): What value should come in place of the question marks (?) in the following questions?

Q. (46) 729 + ? = 4 ⅖ of 125

1. 531
2. 503
3. 511
4. 523
5. 513

Answer: 4

Solution:

729 + ? = 4 ⅖ of 125

⇒ 27 + ? = 22/5 x 125

⇒ ? = (22 x 25) - 27

⇒ ? = 523

Q. (47) 21/30 of 55% of 4200 = ? x 700

1. 3.81
2. 1.11
3. 2.46
4. 2.31
5. 1.26

Answer: 4

Solution: 21/30 x (55/100 x 4200) = ? x 700

⇒ 21/30 x 11 x 5/100 x 4200 = ? x 700

⇒ ? = 21 x 11/100

⇒ ? = 2.31

Q. (48) √ 9261- √ 125 + √ 5832 = ?

1. 34
2. 37
3. 39
4. 31
5. 38

Answer: 1

Solution: $\sqrt[3]{}9261 - \sqrt[3]{}125 + \sqrt[3]{}5832 = ?$

⇒ 21 - 5 + 18 = ?

⇒ ? = 34

Q. (49) 55 x 53 - 20 x 23 + 6671 = $?^2$ x 6

1. 45
2. 39
3. 33
4. 35
5. 41

Answer:

Solution: 55 x 53 - 20 x 23 + 6671 = $?^2$ x 6

⇒ 2915 - 460 + 6671 = $?^2$ x 6

⇒ $?^2$ x 6 = 9126

⇒ $?^2$ = 1521

⇒ ? = 39

Q. (50) 95% of 14400 + 50% of 16^2 = ? + 214

1. 33.0
2. 28.0
3. 24.0
4. 21.0
5. 31.0

nswer:

Solution: 95% of 14400 + 50% of 16^2 = ? + 214

⇒ 95/100 x 120 + 50/100 x 256 = ? + 214

⇒ 19 x 6 + 128 - 214 = ?

⇒ ? = 242 - 214 = 28

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