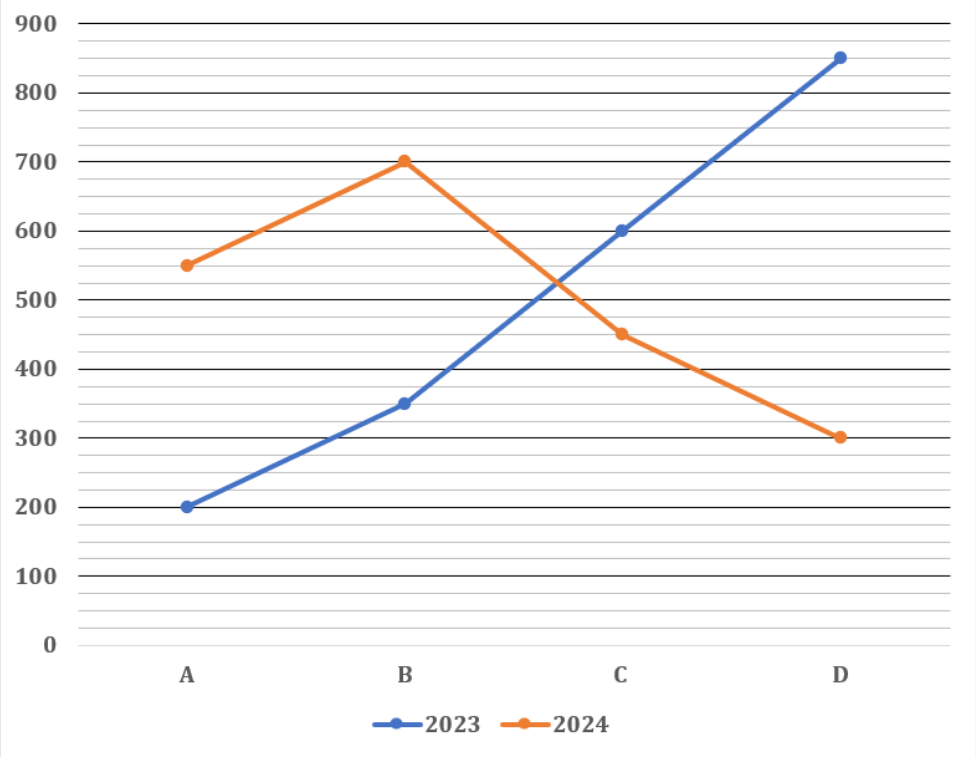
RBI Grade B Phase 1 Quantitative Aptitude Memory Based Paper

Q1. What will come in the place of question (?) mark in following number series:
?, 1024, 64, 8, 2, 1
(a) 3000
(b) 2048
(c) 2884
(d) 32000
(e) 32768
Ans.(e)

Q2. In each of these questions, two equation (I) and (II) are given. You have to solve both the equations and give answer.
I. $35x^2 + 4x - 63 = 0$
II. $7y^2 - 4y - 20 = 0$
(a) If x = y or no relation can be established between x and y.
(b) If x≥y
(c) If x<y
(d) If x≤y
(e) If x>y
Ans.(a)
Sol.

I. $35x^2 + 4x - 63 = 0$
$35x^2 + 49x - 45x - 63 = 0$
$7x(5x+7)-9(5x+7)= 0$
$(7x-9)(5x+7)=0$
$x = \frac{9}{7}, -\frac{7}{5}$
II. $7y^2 - 4y - 20 = 0$
$7y^2-14y+ 10y - 20 = 0$
$7y(y-2)+10(y-2) = 0$
$(7y+10)(y-2) = 0$
$y = -\frac{10}{7}, 2$
Hence, relationship between x and y cannot be determined

Directions {3-8}:
Read the following line graph carefully and answer the questions given below. The line graph shows the total population (males + females) in four different cities in two different years.



Q3. The ratio of total males to total females in city A in 2023 is 3:5, respectively. The total number of females in city A in 2024 is twice that in 2023. Find the difference between the total males in city A in 2023 and 2024.

(a) 300
(b) 225
(c) 150
(d) 175
(e) 250

Ans.(b)

Sol. Total males in city A in 2023 = 200 × 3/8 = 75
Total females in city A in 2023 = 200 -75 = 125
Total number of females in city A in 2024 = 2×125=250
Total number of males in city A in 2024 = 550 - 250 = 300
Required difference = 300 - 75 = 225

Q4. The total population in city E in 2023 is 20% more than the total population in city B in 2023. If the total population in city E in 2023 and 2024 together is 1080, then find the total population in city E in 2024.

(a) 670
(b) 610
(c) 650
(d) 620
(e) 660

Ans.(e)
Sol. Total population in city E in 2023 = 120/100×350=420
Total population in city E in 2024 = 1080 - 420 = 660

Q5. The total population in city B in 2022 is 10% less than the average of the total population in cities C and A in 2024. Find the ratio of the total population in city B in 2022 to the total population in city D in 2023.
(a) 9:17
(b) 11:12
(c) 13: 8
(d) 7:11
(e) 9:19
Ans.(a)
Sol. The total population in city B in 2022 =90% of (450+550)/2 = 450 Required ratio = 450 : 850 = 9 : 17

Q6. The total males in city D in 2023 is 60% of the total population in city B in 2024. The total number of males in city D in 2024 is half of the total number of males in city D in 2023. Find the total number of females in city D in 2023 and 2024 together.
(a) 540
(b) 550
(c) 520
(d) 510
(e) 530
Ans.(c)
Sol. Total males in city D in 2023 =60% of 700 = 420
Total females in city D in 2023 = 850 - 420 = 430
Total number of males in city D in 2024 = 420/2 = 210
Total females in city D in 2024 = 300 - 210 = 90
Total number of females in city D in 2023 and 2024 together = 430 + 90 = 520

Q7. The total population in city C in 2020 is 75% of the total population in city A in 2023. If 30% of the total population in city C in 2020 are males and the rest are females, then the total number of females in city C in 2020 is what percentage of the total population in city D in 2024?
(a) 20%
(b) 30%
(c) 35%
(d) 25%
(e) 10%
Ans.(c)
Sol. Total population in city C in 2020 = 75%200 = 150
Total number of females in city C in 2020 = 150× 70/100 = 105
Required percentage = 105/300×100 = 35%

Q8. 11/17th of the total population in city D in 2023 are literate, and 3/5th of the total population in city B in 2023 are illiterate. Find the difference between the total literate population in cities B and D together in 2023 and the total illiterate population in cities B and D together in 2023.

(a) 180
(b) 190
(c) 120
(d) 140
(e) 150

Ans.(a)

Sol. Total literate population in cities D in 2023 = 11/17×850=550
Total illiterate population in cities D in 2023 = 850 - 550 = 300
Total illiterate population in cities B in 2023 = 3/5 ×350=210
Total literate population in cities B in 2023 = 350 - 210 = 140
Required difference = (550 + 140) - (300 + 210)
= 690 - 510
= 180

Q9. In each of the following questions two equations are given. Solve these equations and give answer:

I. $2x^2+13x+21=0$

II. $y^2+6y+9=0$

(a) if x<y
(b) if x>y
(c) if x≤y
(d) if x≥y
(e) if x=y or no relation can be established

Ans.(c)

Sol.

I. $2x^2+13x+21=0$
$\Rightarrow 2x^2+7x+6x+21=0$
$\Rightarrow x(2x+7)+3(2x+7)=0$
$\Rightarrow (x+3)(2x+7)=0$
$\Rightarrow x=-3, -7/2$

II. $y^2+6y+9=0$
$\Rightarrow y^2+3y+3y+9=0$
$\Rightarrow y(y+3)+3(y+3)=0$
$\Rightarrow (y+3)(y+3)=0$
$\Rightarrow y=-3$
$\therefore y\geq x$

Q10. In a partnership, X and Y invested a total sum of Rs.6400. If X withdrew his whole capital after 8 months and after 2 more months, profit is distributed between X and Y in the ratio of 4: 3 respectively, then find the investment of Y (in Rs.)?

(a) 2400
(b) 3000
(c) 3600
(d) 2000
(e) 4000

Ans.(a)

Sol. Given:

Total investment=6400
X invested for 8 months
Y invested for 10 months
Profit ratio $X:Y=4:3$

Formula Used: Profit∝Capital×Time

Sol. Let investment of X=x
Investment of Y=$6400-x$
$x\times 8:(6400-x)\times 10=4:3$
$24x=40(6400-x)$
$24x=256000-40x$
$64x=256000$
$x=4000$
Investment of Y=$6400-4000=2400$

Q11. What is the total number of students in a class?

I. The average weight of all students is 45 kg.
II. The total weight of boys is 600 kg, which is 120 kg more than the total weight of girls.

(a) Statement I alone is sufficient, but statement II alone is not sufficient.
(b) Statement II alone is sufficient, but statement I alone is not sufficient.
(c) Both statements together are necessary, but neither alone is sufficient.
(d) Either statement I or statement II alone is sufficient.
(e) Both statements together are not sufficient to answer the question.

Ans.(c)

Sol.

Statement I:

The average weight of all students is 45 kg.
That means:
Average weight= =Number of students/Total weight=45
But we don't know the total weight, so, **Statement I alone is not sufficient.**

Statement II:

The total weight of boys is 600 kg, which is 120 kg more than the total weight of girls.

So,
Weight of boys = 600 kg
Weight of girls = 600 – 120 = 480 kg
Total weight=600+480=108 kg
But we don't know the average weight, so we can't find the number of students.
Statement II alone is not sufficient.
Combining I and II:
From I:
Average weight = 45
From II:
Total weight=1080
So,
45=1080/N
$=> N = \frac{1080}{45} = 24$
So, both statements together are necessary, but neither alone is sufficient.

Directions {12-16}:
Read the following information carefully and answer the questions given below. The information is about two types of electronic devices (Laptops and Tablets) sold by three different sellers — X, Y, and Z.
I. The Tablets sold by Y are 20% less than the laptops sold by X.
II. The Tablets sold by X are 40 more than the laptops sold by X.
III. The ratio of Laptops sold by X to Z is 4 : 3, respectively.
IV. The difference between Tablets sold by X and Y is 60.

Q16. The total laptops sold by Y is 25% more than total tablets sold by X. Find the average laptops sold by Y and Z.
(a) 120
(b) 125
(c) 110
(d) 100
(e) 130
Ans.(b)
Sol. Let the laptops sold by X be 5x
The Tablets sold by Y =80% of 5x = 4x
The Tablets sold by X = 5x + 40
The laptops sold by Z = 5x × 3/4 =3.75x
Given,
5x + 40 - 4x = 60
x = 20

Seller	Laptops sold	Tablets sold
X	100	140
Y	-	80
Z	75	-

The total laptops sold by Y =125% of 140=175
Required average = (175+175)/2=125

Q12. What is the ratio of Tablets sold by X to Laptops sold by Z?
(a) 27:13
(b) 29:11
(c) 28:15
(d) 26:19
(e) 29:12
Ans.(c)
Sol. Let the laptops sold by X be 5x
The Tablets sold by Y = 5x × 80% = 4x
The Tablets sold by X = 5x + 40
The laptops sold by Z = 5x × 3/4 = 3.75x
Given,
5x + 40 - 4x = 60
x = 20

Seller	Laptops sold	Tablets sold
X	100	140
Y	-	80
Z	75	-

Required ratio = 140 : 75
= 28 : 15

Q13. If seller Z sold 40% more Tablets than his laptops, then the Tablets sold by Z is what percentage of the laptops sold by X?
(a) 100%
(b) 90%
(c) 105%
(d) 110%
(e) 95%
Ans.(c)
Sol. Let the laptops sold by X be 5x
The Tablets sold by Y = 5x ×80% = 4x
The Tablets sold by X = 5x + 40
The laptops sold by Z = 5x × 3/4 =3.75x
Given,
5x + 40 - 4x = 60
x = 20

Seller	Laptops sold	Tablets sold
X	100	140
Y	-	80
Z	75	-

Tablets sold by Z = 140/ 100 ×75=105
Required percentage = 150/100 ×100=105%

Q14. If Y sold 90 Laptops, then find the difference between total devices (Laptops + Tablets) sold by X and Y?
(a) 70
(b) 80
(c) 50
(d) 60
(e) 40
Ans.(a)
Sol. Let the laptops sold by X be 5x
The Tablets sold by Y = 5x × 80% = 4x
The Tablets sold by X = 5x + 40
The laptops sold by Z = 5x × 3/4 =3.75x
Given,
5x + 40 - 4x = 60
x = 20

Seller	Laptops sold	Tablets sold
X	100	140
Y	-	80
Z	75	-

Total devices (Laptops + Tablets) sold by X = 100 +140 = 240
Total devices (Laptops + Tablets) sold by Y = 90 + 80 = 170
Required difference = 240 - 170 = 70

Q15. If the selling price of each Laptop is Rs. 4000 and each Tablet is Rs. 2500, then what is the total revenue of seller X (in Rs)?
(a) 700500
(b) 720000
(c) 910000
(d) 850000
(e) 750000
Ans.(e)
Sol. Let the laptops sold by X be 5x
The Tablets sold by Y = 5x × 80% = 4x
The Tablets sold by X = 5x + 40
The laptops sold by Z = 5x × ¾ =3.75x

Given,
5x + 40 - 4x = 60
x = 20

Seller	Laptops sold	Tablets sold
X	100	140
Y	-	80
Z	75	-

Required answer = 4000 × 100 + 2500 × 140
= 400000 + 350000 = Rs 750000

Q17. Each of two articles X and Y is sold at Rs.1800. If article X is sold at 50% profit and cost price of article X is half of that of article Y, then find the profit or loss percent on article Y?
(a) 25% profit
(b) 25% loss
(c) 20% profit
(d) 20% loss
(e) 30% loss
Ans.(b)
Sol. Given:
SP of X=1800
SP of Y=1800
Profit on X=50%
CP of X is half of CP of Y
Concept Used:
Profit and loss
Formula Used:
Profit %= (CP – SP)/CP ×100
Sol.
1.5x=1800
x=1200
CP of X=1200
CP of Y=2×1200=2400
Loss on Y=2400−1800=600
Loss %= 600/2400 X 100 = 25

Q18. In how many days 6 men can complete the work?
I: 8 men and 10 women can finish the work in 2 days.
II: 4 men and 5 women can finish the work in 4 days.
(a) Only I is required
(b) Only II is required
(c) Both I and II are required
(d) Either I or II is required
(e) Cannot be answered even from both I and II

Ans.(e)
Sol. From I: (8m + 10w) × 2 = W => 8m + 10w = W/2 ...(1)
From II: (4m + 5w) × 4 = W => 4m + 5w = W/4 ...(2)
Multiply (2) by 2: 8m + 10w = W/2 ...(2')
(1) and (2) are identical, so they give only one independent equation in two unknowns (m, w). Hence m (and so 6m) cannot be uniquely determined.
Therefore, even using both statements together, the time taken by 6 men alone cannot be found.
So, cannot be answered even from both I and II.

Q19. The speed of passenger train and goods train are 108 km/hr and 48 km/hr respectively. The length of passenger train is 50% of the length of the goods train, and they cross each other which is running in opposite direction in 36 seconds. If goods train can cross a bridge in 156 seconds, then what is the length of the bridge (in meters)?
(a) 520
(b) 1040
(c) 720
(d) 840
(e) 960
Ans.(b)
Sol. 108=30m/s,48= 40/3 m/s
Relative speed= 130/3
130/30 X36 = 1560
Let goods train length=L
L+ L/2 = 1560
L = 1040
40/3 ×156=2080
Bridge length=2080−1040=1040

Q20. In each of these questions, two equations (I) and (II) are given. You have to solve both the equations and give answer.
(I) $x^2-4x-5=0$
(II) $7y^2-25y-12=0$
(a) if x>y
(b) if x≥y
(c) if x<y
(d) if x ≤y
(e) if x = y or no relation can be established between x and y.
Ans.(e)
Sol.
(I) $x^2-4x-5=0$
$x^2-5x+x-5=0$
$x(x-5)+1(x-5)=0$
$x=5, -1.$

(II) $7y^2-25y-12=0$

$7y^2-28y+3y-12=0$

$7y(y-4)+3(y-4)=0$

$(y-4)(7y+3)=0$

$y=4, -3/7$

$\therefore$ No relation.

Q21. In each of the following questions two equations are given. Solve these equations and give answer:

I. $x^2-289=0$

II. $y^3-4913=0$

(a) if $x<y$

(b) if $x>y$

(c) if $x\leq y$

(d) if $x\geq y$

(e) if $x=y$ or no relation can be established

Ans.(c)

Sol.

I. $x^2=289 \Rightarrow x=\pm 17$

II. $y^3=4913 \Rightarrow y=17$

$\therefore y\geq x$

Q22. A rectangular garden has its length three times its breadth. A uniform pathway of width 3 m runs inside the garden along its boundary. If the area of the pathway is 270 m^2, then find the length of the garden (in meters).

(a) 38.25

(b) 28.25

(c) 18.25

(d) 48.25

(e) 8.25

Ans.(a)

Sol. Given:

Length=3×Breadth

Width of pathway=3

Area of pathway=270

Concept Used:

Area of pathway=Outer area−Inner area

Formula Used:

Area of rectangle=Length×Breadth

Sol.

Let breadth=x

Then length=3x

Inner dimensions:

(3x−6),(x−6)

$3x \cdot x-(3x-6)(x-6)=270$

$3x^2-(3x^2-24x+36)=270$

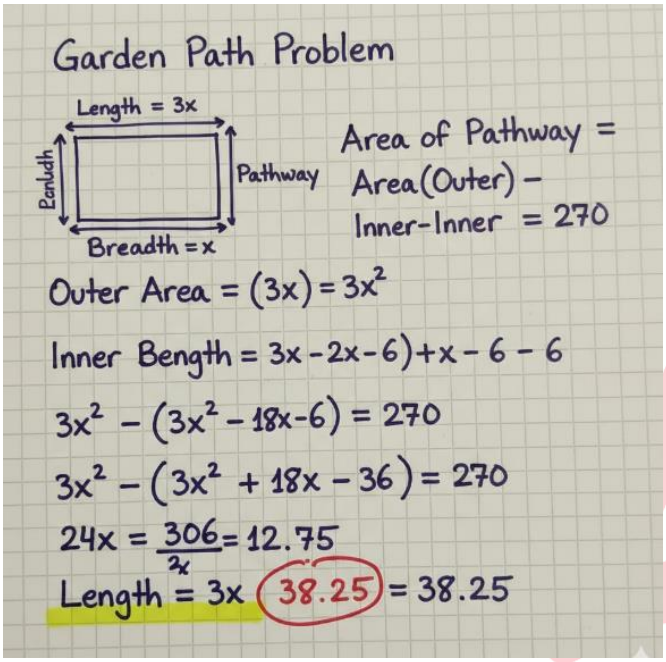
$24x-36=270$

$24x=306$

$x=12.75$

Length=3x=38.25

Exam Hall Approach



Q23. Find the missing term in the following number series questions.

500, 548, 620, ?, 836, 980

(a) 716

(b) 736

(c) 756

(d) 696

(e) 746

Ans.(a)

Sol.

Pattern of the series

500		548		620		**716**		836		980
	+48		+72		+96		+120		+144	
	12×4		12×6		12×8		12×10		12×12	

Or, 500, 548, 620, ? = **716**, 836, 980

	+48		+72		+96		+120		+144	
		+24		+24		+24		+24		

Q24. Find the overall profit or loss percentage of Ravi, if he bought 120 pens at the rate of 12 pens for Rs p, and sold them at the rate of q pens for Rs 12.
I: The H.C.F. of p and q is 3.
II: The ratio of p to q is 4 : 5.
(a) Only I is required
(b) Only II is required
(c) Both I and II are required
(d) Either I or II is required
(e) Cannot be answered even from both I and II
Ans.(c)
Sol. Using Statement II alone (p : q = 4 : 5):
Let p = 4k, q = 5k
Then:
CP = 10p = 10 × 4k = 40k
SP = 1440 / q = 1440 / 5k = 288 / k
Now,
Profit/Loss % = (288/k – 40k)/40k x 100
We can't simplify further unless we know the value of **k**, so **Statement II alone is not sufficient**.
Using Statement I alone (HCF of p and q = 3):
Knowing just the HCF doesn't provide specific values or ratio - hence,
Statement I alone is not sufficient.
Using Both I and II:
From II: p : q = 4 : 5
So, let p = 4x, q = 5x
From I: HCF(p, q) = 3
Then HCF(4x, 5x) = x
So x = 3
Hence, p = 4×3 = 12 q = 5×3 = 15
Now compute:
CP = 10p = 10 × 12 = 120
SP = 1440/q = 1440/15 = 96
Loss = 120 - 96 = 24
Loss % = 24/120 x 100 = 20%
Thus, with **both I and II**, we can compute the exact **loss percentage**.
So, both I and II are required

Q25. In each of the following questions two equations are given. Solve these equations and give answer:
I. $x^2 + 7x = 60$ II. $y^2 + 19y + 84 = 0$
(a) x > y
(b) x < y
(c) x = y or No relation
(d) x ≥ y
(e) x ≤ y

Ans.(c)

Sol. From I: $x^2 + 7x = 60$

$x^2 + 7x - 60 = 0$

$x^2 + 12x - 5x - 60 = 0$

$x(x + 12) - 5(x + 12) = 0$

$(x + 12)(x - 5) = 0$

$x = -12, 5$

From II: $y^2 + 19y + 84 = 0$

$y^2 + 12y + 7y + 84 = 0$

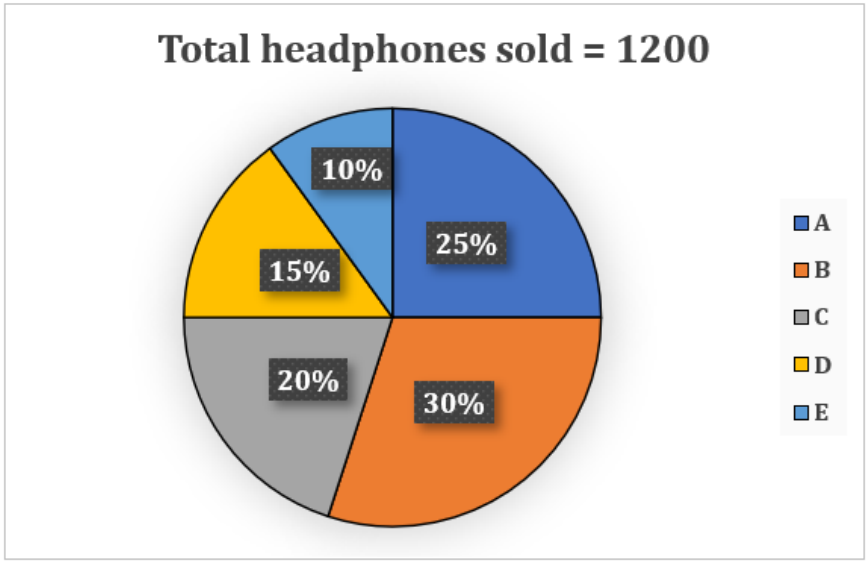
$y(y + 12) + 7(y + 12) = 0$

$(y + 12)(y + 7) = 0$

$y = -12, -7$

Directions {26-30}:

The pie chart shows the percentage distribution of headphones sold by Stores A, B, C, D, and E. The table shows the ratio of (Headphones + Earbuds) sold together to Earbuds sold by these stores.



Store	Ratio (Headphones + Earbuds : Earbuds)
A	5 : 2
B	10 : 1
C	3 : 1
D	4 : 1
E	11 : 5

Q26. The Total number of earbuds sold by F is 15 more than 4/5 of the total headphones sold by A. If the average number of headphones sold by F and B is 245, then find the number of headphones and earbuds together sold by F.

(a) 345
(b) 390
(c) 385
(d) 355
(e) 360

Ans.(c)

Sol. For store A

Total headphones sold = 1200 × 25/100 = 300
Let Headphones and Earbuds together sold be 5a
Earbuds sold = 2a
5a - 2a = 300
3a = 300
a = 100
Headphones and Earbuds together sold = 500
Earbuds sold = 200
Headphones sold = 500 - 200 = 300

For store B

Total headphones sold = 1200 × 30/100 = 360
Let Headphones and Earbuds together sold be 10b
Earbuds sold = b
10b - b = 360
9b = 360
b = 40
Headphones and Earbuds together sold = 400
Earbuds sold = 40
Headphones sold = 400 - 40 = 360

For store C

Total headphones sold = 1200 × 20/100=240
Let Headphones and Earbuds together sold be 3c
Earbuds sold = c
3c - c = 240
2c = 240
c = 120
Headphones and Earbuds together sold = 360
Earbuds sold = 120
Headphones sold = 360 - 120 = 240

For store D

Total headphones sold = 1200×15/100 = 180
Let Headphones and Earbuds together sold be 4d
Earbuds sold = d
4d - d = 180
3d = 180
d = 60

Headphones and Earbuds together sold = 240
Earbuds sold = 60
Headphones sold = 240 - 60 =180
For store E
Total headphones sold = 1200 × 10/100 = 120
Let Headphones and Earbuds together sold be 11e
Earbuds sold = 5e
11e - 5e = 120
6e = 120
e = 20
Headphones and Earbuds together sold = 220
Earbuds sold = 100
Headphones sold = 220 - 100 = 120

Stores	Headphones sold	Earbuds sold
A	300	200
B	360	40
C	240	120
D	180	60
E	120	100

Total number of earbuds sold by F = 15+ 4/5 ×300=255
Total number of headphones sold by F = 245×2-360=130
Required answer = 255 + 130 = 385

Q27. The total number of earbuds sold by C is what percentage more or less than the total number of headphones sold by E?
(a) 100%
(b) 10%
(c) 0%
(d) 5%
(e) 20%
Ans.(c)
Sol. For store A
Total headphones sold = 1200 × 25/100 = 300
Let Headphones and Earbuds together sold be 5a
Earbuds sold = 2a
5a - 2a = 300
3a = 300
a = 100
Headphones and Earbuds together sold = 500
Earbuds sold = 200
Headphones sold = 500 - 200 = 300

For store B

Total headphones sold = 1200 × 30/100 = 360

Let Headphones and Earbuds together sold be 10b

Earbuds sold = b

10b - b = 360

9b = 360

b = 40

Headphones and Earbuds together sold = 400

Earbuds sold = 40

Headphones sold = 400 - 40 = 360

For store C

Total headphones sold = 1200 × 20/100 = 240

Let Headphones and Earbuds together sold be 3c

Earbuds sold = c

3c - c = 240

2c = 240

c = 120

Headphones and Earbuds together sold = 360

Earbuds sold = 120

Headphones sold = 360 - 120 = 240

For store D

Total headphones sold = 1200 × 15/100 = 180

Let Headphones and Earbuds together sold be 4d

Earbuds sold = d

4d - d = 180

3d = 180

d = 60

Headphones and Earbuds together sold = 240

Earbuds sold = 60

Headphones sold = 240 - 60 =180

For store E

Total headphones sold = 1200 × 10/100 = 120

Let Headphones and Earbuds together sold be 11e

Earbuds sold = 5e

11e - 5e = 120

6e = 120

e = 20

Headphones and Earbuds together sold = 220

Earbuds sold = 100

Headphones sold = 220 - 100 = 120

Stores	Headphones sold	Earbuds sold
A	300	200
B	360	40
C	240	120
D	180	60
E	120	100

Required percentage = 120−120120×100=0%\frac{120 - 120}{120} \times 100 = 0\%120120−120 ×100=0%

Q28. If the price of each headphone and each earbud is Rs x^2 and X+200, respectively. If store D received Rs 126000 from selling all the headphones and earbuds together, then find X.

(a) 25
(b) 30
(c) 18
(d) 22
(e) None of these

Ans.(a)

Sol. For store A

Total headphones sold = 1200 × 25/100 = 300
Let Headphones and Earbuds together sold be 5a
Earbuds sold = 2a
5a - 2a = 300
3a = 300
a = 100
Headphones and Earbuds together sold = 500
Earbuds sold = 200
Headphones sold = 500 - 200 = 300

For store B

Total headphones sold = 1200 × 30/100 = 360
Let Headphones and Earbuds together sold be 10b
Earbuds sold = b
10b - b = 360
9b = 360
b = 40
Headphones and Earbuds together sold = 400
Earbuds sold = 40
Headphones sold = 400 - 40 = 360

For store C

Total headphones sold = 1200 × 20/100 = 240
Let Headphones and Earbuds together sold be 3c
Earbuds sold = c
3c - c = 240

2c = 240
c = 120
Headphones and Earbuds together sold = 360
Earbuds sold = 120
Headphones sold = 360 - 120 = 240
For store D
Total headphones sold = 1200 × 15/100 = 180
Let Headphones and Earbuds together sold be 4d
Earbuds sold = d
4d - d = 180
3d = 180
d = 60
Headphones and Earbuds together sold = 240
Earbuds sold = 60
Headphones sold = 240 - 60 =180
For store E
Total headphones sold = 1200 × 10/100 = 120
Let Headphones and Earbuds together sold be 11e
Earbuds sold = 5e
11e - 5e = 120
6e = 120
e = 20
Headphones and Earbuds together sold = 220
Earbuds sold = 100
Headphones sold = 220 - 100 = 120

Stores	Headphones sold	Earbuds sold
A	300	200
B	360	40
C	240	120
D	180	60
E	120	100

ATQ,
$x^2 \times 180 + (X + 200) \times 60 = 126000$
$180x^2 + 60X - 114000 = 0$
$3x^2 + x - 1900 = 0$
$3x^2 - 75x + 76x - 1900 = 0$
$3x(x - 25) + 76(x - 25) = 0$
$(3x + 76)(x - 25) = 0$
$x = -76/3, 25$
$x = 25$

Q29. The **total number of power banks sold by C is 20% more than the total number of earbuds sold by D. If the total number of chargers sold by C and the total number of headphones sold by B are in the ratio of 11:18, respectively, then find the difference between the number of chargers and the total number of power banks sold by C.**

(a) 135
(b) 123
(c) 150
(d) 148
(e) 166

Ans.(d)

Sol. For store A

Total headphones sold = 1200 × 25/100 = 300
Let Headphones and Earbuds together sold be 5a
Earbuds sold = 2a
5a - 2a = 300
3a = 300
a = 100
Headphones and Earbuds together sold = 500
Earbuds sold = 200
Headphones sold = 500 - 200 = 300

For store B

Total headphones sold = 1200 × 30/100 = 360
Let Headphones and Earbuds together sold be 10b
Earbuds sold = b
10b - b = 360
9b = 360
b = 40
Headphones and Earbuds together sold = 400
Earbuds sold = 40
Headphones sold = 400 - 40 = 360

For store C

Total headphones sold = 1200 × 20/100 = 240
Let Headphones and Earbuds together sold be 3c
Earbuds sold = c
3c - c = 240
2c = 240
c = 120
Headphones and Earbuds together sold = 360
Earbuds sold = 120
Headphones sold = 360 - 120 = 240

For store D
Total headphones sold = 1200 × 15/100 = 180
Let Headphones and Earbuds together sold be 4d
Earbuds sold = d
4d - d = 180
3d = 180
d = 60
Headphones and Earbuds together sold = 240
Earbuds sold = 60
Headphones sold = 240 - 60 =180
For store E
Total headphones sold = 1200 × 10/100 = 120
Let Headphones and Earbuds together sold be 11e
Earbuds sold = 5e
11e - 5e = 120
6e = 120
e = 20
Headphones and Earbuds together sold = 220
Earbuds sold = 100
Headphones sold = 220 - 100 = 120

Stores	Headphones sold	Earbuds sold
A	300	200
B	360	40
C	240	120
D	180	60
E	120	100

Total number of power banks sold by C = 120/100 x 60 =72
Total number of chargers sold by C = 360× 11/18 = 220
Required difference = 220 - 72 = 148

Q30. Find the average number of headphones sold by A and earbuds sold by D.
(a) 220
(b) 160
(c) 140
(d) 200
(e) 180
Ans.(e)
Sol. For store A
Total headphones sold = 1200 × 25 /100 = 300
Let Headphones and Earbuds together sold be 5a
Earbuds sold = 2a

5a - 2a = 300
3a = 300
a = 100
Headphones and Earbuds together sold = 500
Earbuds sold = 200
Headphones sold = 500 - 200 = 300
For store B
Total headphones sold = 1200 × 30/100 = 360
Let Headphones and Earbuds together sold be 10b
Earbuds sold = b
10b - b = 360
9b = 360
b = 40
Headphones and Earbuds together sold = 400
Earbuds sold = 40
Headphones sold = 400 - 40 = 360
For store C
Total headphones sold = 1200 × 20/100 = 240
Let Headphones and Earbuds together sold be 3c
Earbuds sold = c
3c - c = 240
2c = 240
c = 120
Headphones and Earbuds together sold = 360
Earbuds sold = 120
Headphones sold = 360 - 120 = 240
For store D
Total headphones sold = 1200 × 15/100 = 180
Let Headphones and Earbuds together sold be 4d
Earbuds sold = d
4d - d = 180
3d = 180
d = 60
Headphones and Earbuds together sold = 240
Earbuds sold = 60
Headphones sold = 240 - 60 =180
For store E
Total headphones sold = 1200 × 10/100 = 120
Let Headphones and Earbuds together sold be 11e
Earbuds sold = 5e
11e - 5e = 120
6e = 120
e = 20

Headphones and Earbuds together sold = 220
Earbuds sold = 100
Headphones sold = 220 - 100 = 120

Stores	Headphones sold	Earbuds sold
A	300	200
B	360	40
C	240	120
D	180	60
E	120	100

Required average = (300 + 60)/2 = 180