

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 the following questions, two equations are given. Solve both the equations and determine the relationship between x and y.

I. $35x^2 + 4x - 63 = 0$

II. $7y^2 - 4y - 20 = 0$

- (a) If $x = y$ or not determinable
- (b) If $x \geq y$
- (c) If $x < y$
- (d) If $x \leq y$
- (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. $7y^2 - 4y - 20 = 0$

$$7y^2 - 14y + 10y - 20 = 0$$

$$7y(y-2) + 10(y-2) = 0$$

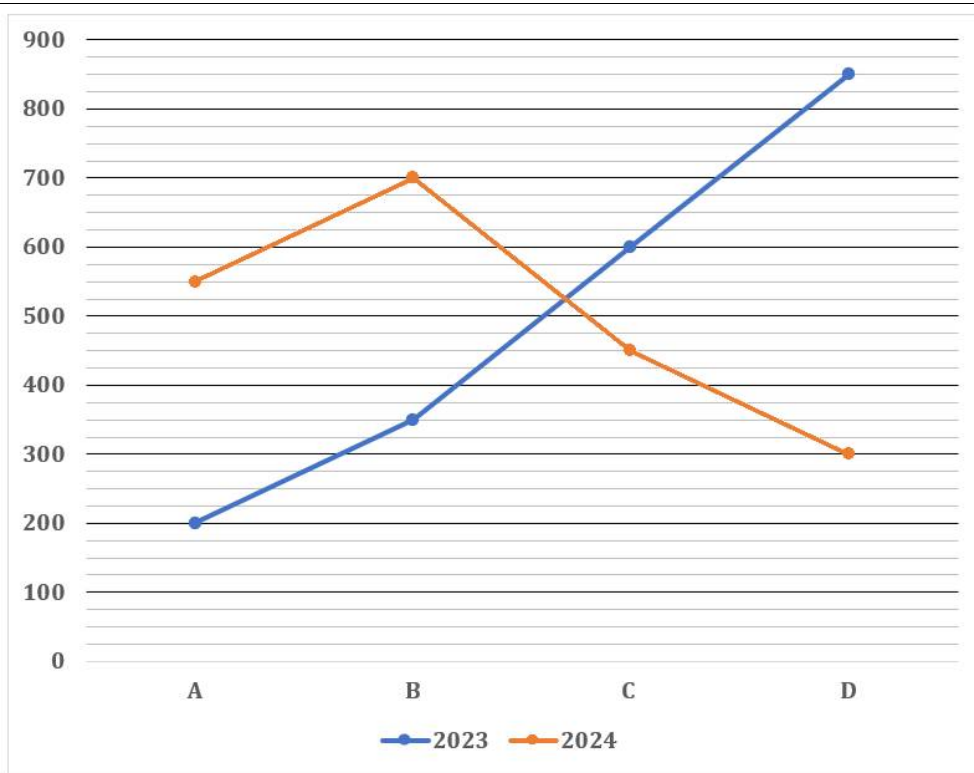
$$(7y+10)(y-2) = 0$$

$$y = -\frac{10}{7}, 2$$

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 the number of females in city A in 2023 to the total number of females in city A in 2024 is 2:3. Find the total number of males in city A in 2024.

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

Ans.(b)

Sol. Total males in city A in 2024 =

Total females in city A in 2024 =

Total number of males in city A in 2024 =

Total number of females in city A in 2024 =

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 = $120/100 \times 350 = 420$

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 = $10\% \text{ less than the average of the total population in cities C and A in 2024}$
 $= 9 : 17$

Q6. The total population in city D in 2023 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 D in 2023 to the total population in city E in 2024.

- (a) 540
- (b) 550
- (c) 520
- (d) 510
- (e) 530

Ans.(c)

Sol. Total population in city D in 2023 = $10\% \text{ less than the average of the total population in cities C and A in 2024}$
Total female population in city D in 2023 = $850 - 420 = 430$
Total number of females in city D in 2024 = $1200 - 210 = 990$
Total female population in city D in 2023 = $300 - 210 = 90$
Total number of females in city D in 2024 = $990 - 90 = 900$

Q7. The total population in city C in 2020 is 75% of the total population in city D in 2024. If 30% of the total population 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 = $75\% \times 200 = 150$

Total number of females in city C in 2020 = $150 \times 70/100 = 105$

Required percentage = $105/300 \times 100 = 35\%$

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 lit

Total illitera

Total illitera

Total literat

Required di

$$= 690 - 510$$

$$= 180$$

Q9. In each of the following questions, two equations are given. You have to give answer:

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

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

- (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. $2x^2 + 13x + 2 = 0$

$$\Rightarrow 2x^2 + 7x + 6x + 2 = 0$$

$$\Rightarrow x(2x + 7) + 3(2x + 7) = 0$$

$$\Rightarrow (x + 3)(2x + 7) = 0$$

$$\Rightarrow x = -3, -7/2$$

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 invest

X invested for

Y invested for

Profit ratio

Formula Us

Sol. Let inve

Investment

$x \times 8 : (6400 - x) \times 10 = 4 : 3$

$24x = 40(6400 - 10x)$

$24x = 256000 - 400x$

$64x = 256000$

$x = 4000$

Investment

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 to answer the question.
- (b) Statement II alone is sufficient to answer the question.
- (c) Both statements together are not sufficient to answer the question.
- (d) Either statement I or statement II alone is sufficient to answer the question.
- (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 = $\frac{\text{Number of students}}{\text{Total weight}} = 45$

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 = 1080 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,

$45 = 1080 / N$

$$\Rightarrow N = \frac{1080}{45}$$

So, both statements are sufficient.

Directions:

Read the information carefully and answer the questions below. The information is given in the form of a table and a bar graph. The information is given in the form of a table and a bar graph. The information is given in the form of a table and a bar graph.

- I. The Table sold by X is 20% more than the laptops sold by Y.
II. The Table sold by Y is 20% more than the laptops sold by X.
III. The ratio of the number of Tablets sold by X and Y is 3:2.
IV. The difference between the number of Tablets sold by X and Y is 40.

Q16. The total number of laptops sold by Y is 20% more than total tablets sold by X. Find the number of laptops sold by Y and the number of tablets sold by X.

- (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 = $5x \times \frac{3}{4} = 3.75x$

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

The Tablets

The Tablets

The laptops

Given,

$5x + 40 - 4x$

$x = 20$

Seller	La
X	
Y	
Z	

Required ra

$= 28 : 15$

Q13. If sell **percentage**

- (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 = $5x \times 80\% = 4x$

The Tablets sold by X = $5x + 40$

The laptops sold by Z = $5x \times 3/4 = 3.75x$

Given,

$5x + 40 - 4x = 60$

$x = 20$

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

Tablets sold by Z = $140 / 100 \times 75 = 105$

Required percentage = $150 / 100 \times 100 = 105\%$

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

The Tablets

The Tablets

The laptops

Given,

$5x + 40 - 4x$

$x = 20$

Seller	La
X	
Y	
Z	

Total device (Laptops + Tablets) sold by X = $100 + 140 = 240$

Total device (Laptops + Tablets) sold by Y = $90 + 80 = 170$

Required di

Q15. If the total revenue of seller A (in Rs.) is 700500, what is the

- (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 = $5x \times 80\% = 4x$

The Tablets sold by X = $5x + 40$

The laptops sold by Z = $5x \times \frac{3}{4} = 3.75x$

Given,

$$5x + 40 - 4x = 60$$

$$x = 20$$

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

$$\text{Required answer} = 4000 \times 100 + 2500 \times 140$$

$$= 400000 + 350000 = \text{Rs } 750000$$

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

(a) 25% profit

(b) 25% loss

(c) 20% profit

(d) 20% loss

(e) 30% loss

Ans.(b)

Sol. Given:

$$\text{SP of X} = 1800$$

$$\text{SP of Y} = 1800$$

$$\text{Profit on X} = 50\%$$

$$\text{CP of X is half of SP}$$

Concept Used

Profit and Loss

Formula Used

$$\text{Profit \%} = \left(\frac{\text{SP} - \text{CP}}{\text{CP}} \right) \times 100$$

Sol.

$$1.5x = 1800$$

$$x = 1200$$

$$\text{CP of X} = 1200$$

$$\text{CP of Y} = 2 \times 1200$$

$$\text{Loss on Y} = 2400 - 1800 = 600$$

$$\text{Loss \%} = \frac{600}{2400} \times 100 = 25$$

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: $(8m + 10w) \times 2 = W \Rightarrow 8m + 10w = W/2 \dots(1)$

From II: $(4m + 5w) \times 4 = W \Rightarrow 4m + 5w = W/4 \dots(2)$

Multiply (2) by 2: $8m + 10w = W/2 \dots(2')$

(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 on a bridge in 156 seconds, the length of the bridge is

- (a) 520
- (b) 1040
- (c) 720
- (d) 840
- (e) 960

Ans.(b)

Sol. $108 = 30$

Relative speed

$130/30 \times 36$

Let goods train

$L + L/2 = 156$

$L = 1040$

$40/3 \times 156 =$

Bridge length

Q20. In each of these questions, two equations (I) and (II) are given. You have to solve both the equations and mark the correct answer.

(I) $x^2 - 4x - 5 = 0$

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

- (a) if $x > y$
- (b) if $x \geq y$
- (c) if $x < y$
- (d) if $x \leq y$
- (e) if $x = y$ or no relation can be established between x and y.

Ans.(e)

Sol.

(I) $x^2 - 4x - 5 = 0$

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

$x(x-5) + 1(x-5) = 0$

$x = 5, -1.$

$$\begin{aligned}
 \text{(II)} \quad & 7y^2 - 25y - 12 = 0 \\
 & 7y^2 - 28y + 3y - 12 = 0 \\
 & 7y(y-4) + 3(y-4) = 0 \\
 & (y-4)(7y+3) = 0 \\
 & y = 4, -3/7 \\
 \therefore & \quad \text{No relation.}
 \end{aligned}$$

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

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 field has a length three times its breadth. A rectangular pathway of width 3 m runs inside the field. The area of the pathway is 270 m². Find the length of the field.

- (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:

$$(3x-6), (x-6)$$

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

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

$$24x - 36 = 270$$

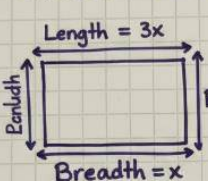
$$24x = 306$$

$$x = 12.75$$

$$\text{Length} = 3x = 38.25$$

Exam Hall Approach

Garden Path Problem



Area of Pathway =
Area(Outer) -
Inner-Inner = 270

Outer Area = $(3x)^2 = 3x^2$

Inner Length = $3x - 2 \times 6 + x - 6 - 6$

$3x^2 - (3x^2 - 18x - 6) = 270$

$3x^2 - (3x^2 + 18x - 36) = 270$

$24x = \frac{306}{2} = 12.75$

Length = $3x = 38.25$

Q23. Find the sum of the series

500, 548, 620, 716, 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	+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 I:

Let $p = 4k$, $q = 5k$

Then:

CP = $10p = 10 \times 4k = 40k$

SP = $1440 / q = 1440 / 5k$

Now,

Profit/Loss % = $\frac{SP - CP}{CP} \times 100$

We can't find the value of k

Using Statement II:

Knowing just the ratio of p and q, we can't find the exact value of p or q

Statement I and II together:

Using Both Statements:

From II: $p : q = 4 : 5$

So, let $p = 4x$ and $q = 5x$

From I: HCF(p, q) = 3

Then HCF($4x, 5x$) = 3

So $x = 3$

Hence, $p = 4 \times 3 = 12$ and $q = 5 \times 3 = 15$

Now compute the profit/loss percentage

CP = $10p = 10 \times 12 = 120$

SP = $1440 / q = 1440 / 15 = 96$

Loss = $120 - 96 = 24$

Loss % = $24 / 120 \times 100 = 20\%$

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) $x \geq y$
- (e) $x \leq y$

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

The pie chart

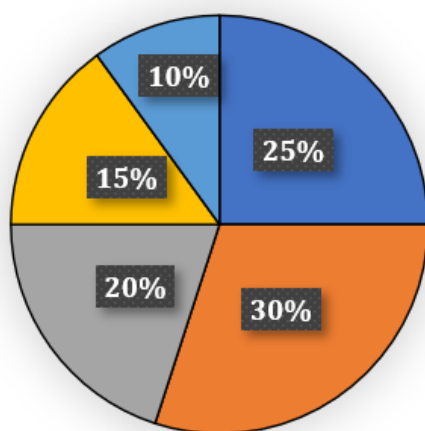
The table shows

stores.

C, D, and E.

ld by these

Total headphones sold = 1200



Store	Ratio
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 $\frac{4}{5}$ 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 = $1200 \times 25/100 = 300$

Let Headphones and Earbuds together sold be 5a

Earbuds sold = 2a

$5a - 2a = 300$

$3a = 300$

$a = 100$

Headphones

Earbuds sold

Headphones

For store B

Total headp

Let Headph

Earbuds sol

$10b - b = 360$

$9b = 360$

$b = 40$

Headphones

Earbuds sol

Headphones = $10 -$

For store C

Total headphones sold = $1200 \times 20/100 = 240$

Let Headphones and Earbuds together sold be 3c

Earbuds sold

$3c - c = 240$

$2c = 240$

$c = 120$

Headphones and Earbuds together sold = 360

Earbuds sold = 120

Headphones sold = $360 - 120 = 240$

For store D

Total headphones sold = $1200 \times 15/100 = 180$

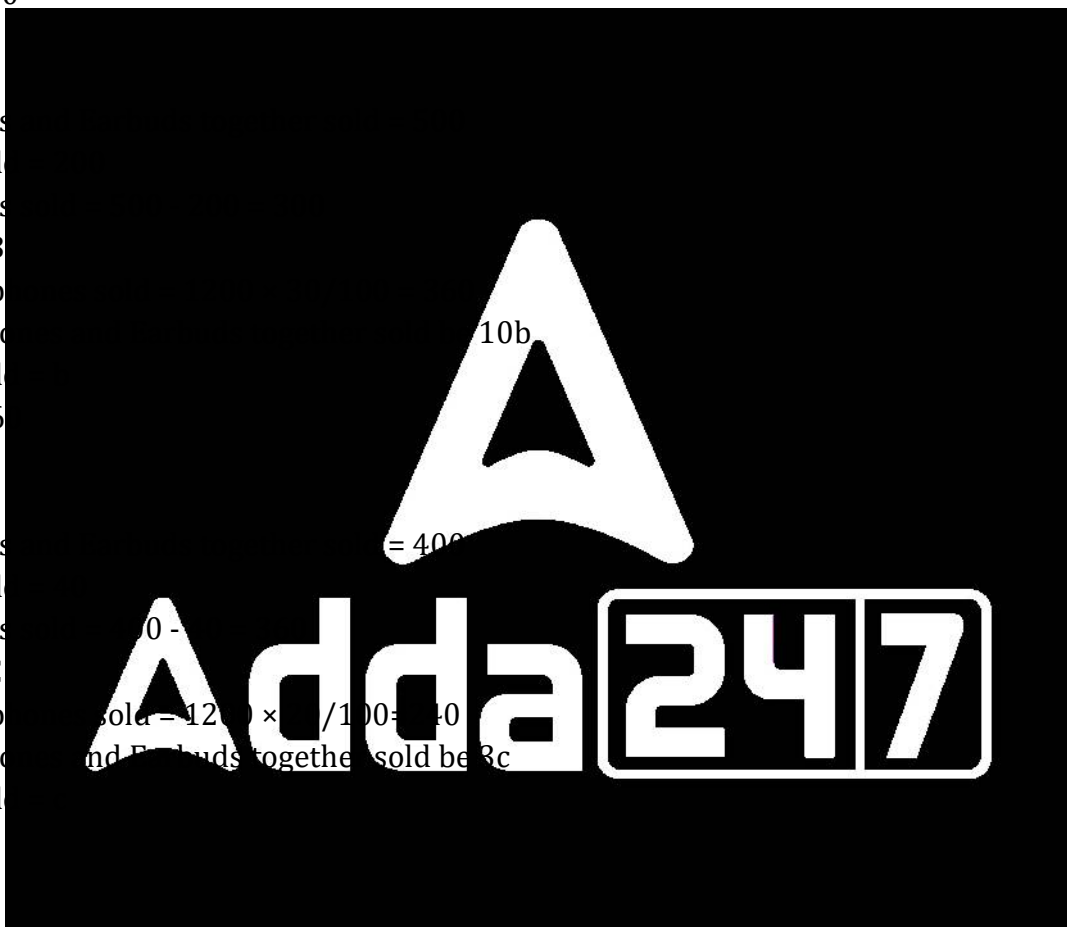
Let Headphones and Earbuds together sold be 4d

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 = $1200 \times 10/100 = 120$

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 = 120

Stores	Headphones	Earbuds
A		
B		
C		
D		
E		

Total number of headphones sold = $1200 \times 25/100 = 300$

Total number of Earbuds sold = $1200 \times 20/100 = 240$

Required answer =

Q27. The total number of headphones and earbuds sold by store E 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 = $1200 \times 25/100 = 300$

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 = $1200 \times 30/100 = 360$

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 headp

Let Headpho

Earbuds sol

$$3c - c = 240$$

$$2c = 240$$

$$c = 120$$

Headphones

Earbuds sol

Headphones

For store D

Total headp

Let Headpho

Earbuds sol

$$4d - d = 180$$

$$3d = 180$$

$$d = 60$$

Headphones

Earbuds sol

Headphones

For store E

Total headphones sold = $1200 \times 10/100 = 120$

Let Headphones and Earbuds together sold be $11e$

Earbuds sold = $5e$

$$11e - 5e = 120$$

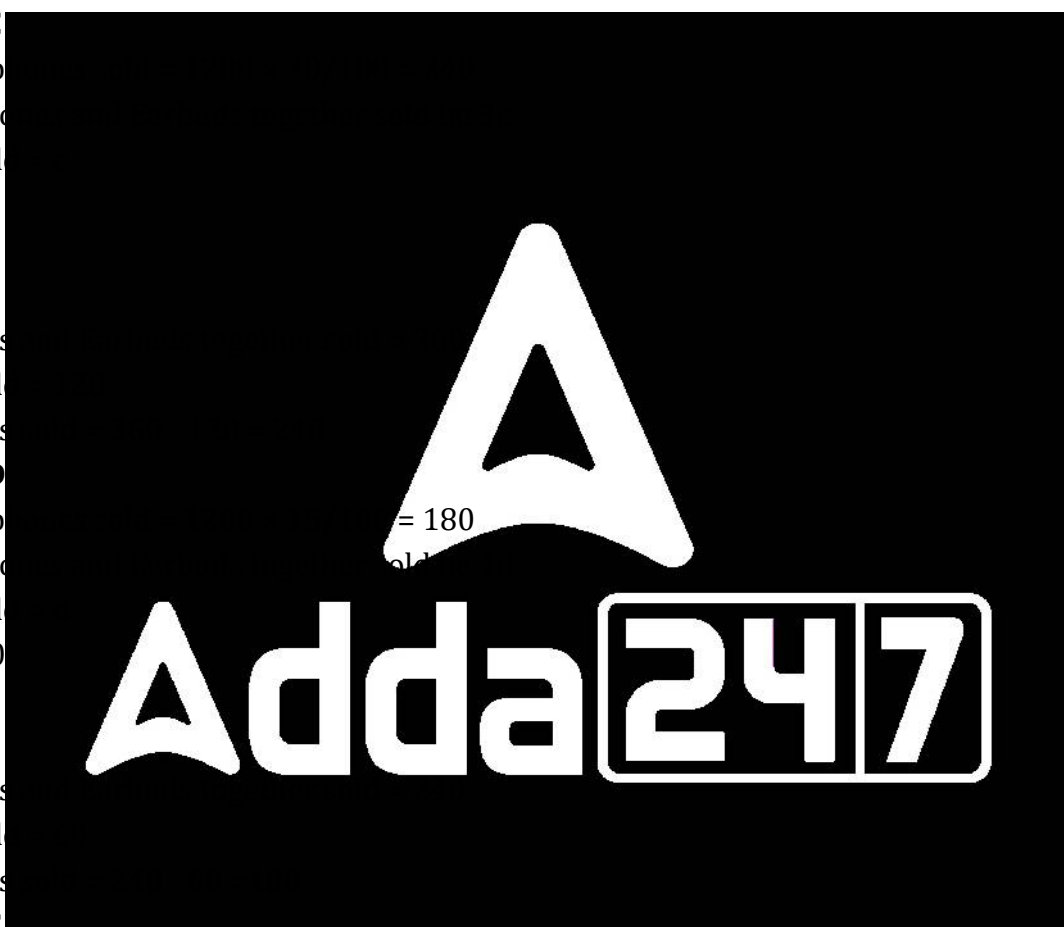
$$6e = 120$$

$$e = 20$$

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 = $\frac{120 - 120}{120} \times 100 = 0\%$

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 D

Total headphones sold = 180

Let Headphones and Earbuds sold together be $5a$

Earbuds sold = 60

$5a - 2a = 300$

$3a = 300$

$a = 100$

Headphones sold = $100 \times 200 = 20000$

Earbuds sold = 60

Headphones = $50 \times 200 = 10000$

For store B

Total headphones sold = 360

Let Headphones and Earbuds sold together be $10b$

Earbuds sold = 40

$10b - b = 360$

$9b = 360$

$b = 40$

Headphones and Earbuds together sold = 400

Earbuds sold = 40

Headphones sold = $400 - 40 = 360$

For store C

Total headphones sold = $1200 \times 20/100 = 240$

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 = $1200 \times 15/100 = 180$

Let Headphones and Earbuds together sold be $4d$

Earbuds sold = d

$$4d - d = 180$$

$$3d = 180$$

$$d = 60$$

Headphones

Earbuds sold

Headphones

For store E

Total headp

Let Headphones and Earbuds together sold be $11e$

Earbuds sold

$$11e - 5e = 120$$

$$6e = 120$$

$$e = 20$$

Headphones

Earbuds sold

Headphones

Stores	Headphones sold	Earbuds sold
A	240	120
B	360	120
C		
D		
E		

Headphones

Earbuds sold

Headphones

Earbuds sold

Headphones

Earbuds sold

Headphones

Earbuds sold

Headphones

Earbuds sold

Headphones

Earbuds sold

Headphones

Earbuds sold

Headphones

Earbuds sold

Headphones

Earbuds sold

Headphones

Earbuds sold

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 B

Total headphones sold = 1200

Let Headphones sold = $5a$

Earbuds sold = $2a$

$5a - 2a = 300$

$3a = 300$

$a = 100$

Headphones sold = $5 \times 100 = 500$

Earbuds sold = $2 \times 100 = 200$

Headphones sold = 500

For store B

Total headphones sold = 1200

Let Headphones sold = $10b$

Earbuds sold = b

$10b - b = 360$

$9b = 360$

$b = 40$

Headphones sold = $10 \times 40 = 400$

Earbuds sold = 40

Headphones sold = 400

For store C

Total headphones sold = $1200 \times 20/100 = 240$

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 = $1200 \times 15/100 = 180$

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 headp

Let Headpho

Earbuds sol

$$11e - 5e = 120$$

$$6e = 120$$

$$e = 20$$

Headphones

Earbuds sol

Headphones

Stores	Headphones	Earbuds
A		
B		
C		
D		
E		

Total number of lower banks sold by C = $120/100 \times 60 = 72$

Total numbe

Required di

Q30. Find the

(a) 220

(b) 160

(c) 140

(d) 200

(e) 180

Ans.(e)

Sol. For store A

Total headphones sold = $1200 \times 25/100 = 300$

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 = $1200 \times 30/100 = 360$

Let Headphones and Earbuds together sold be $10b$

Earbuds sold = b

$$10b - b = 360$$

$$9b = 360$$

$$b = 40$$

Headphones

Earbuds sold

Headphones

For store C

Total headp

Let Headph

Earbuds sol

$$3c - c = 240$$

$$2c = 240$$

$$c = 120$$

Headphones

Earbuds sol

Headphones = $30 -$

For store D

Total headp sold = $1200 \times 10/100 = 120$

Let Headphones and Earbuds together sold be $4d$

Earbuds sol

$$4d - d = 180$$

$$3d = 180$$

$$d = 60$$

Headphones and Earbuds together sold = 240

Earbuds sold = 60

Headphones sold = $240 - 60 = 180$

For store E

Total headphones sold = $1200 \times 10/100 = 120$

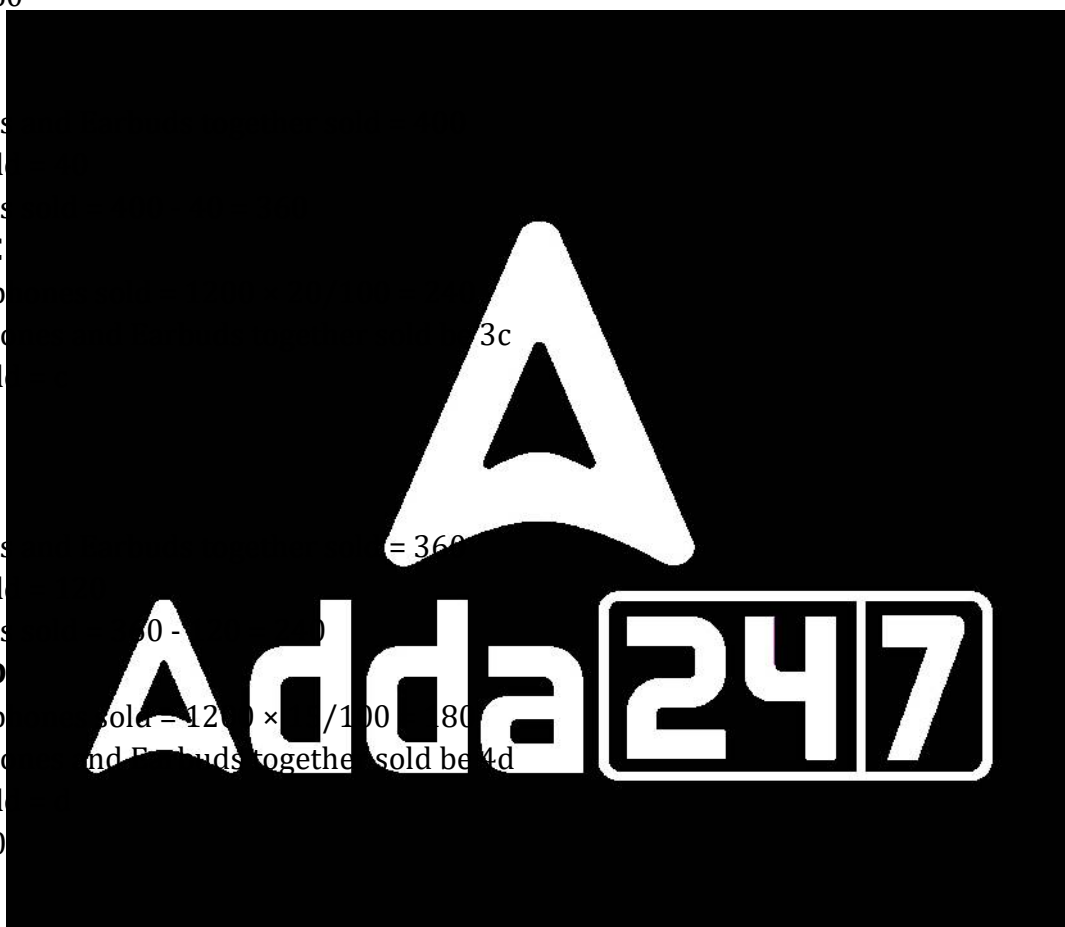
Let Headphones and Earbuds together sold be $11e$

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 = $(200 + 60) / 2 = 130$

