

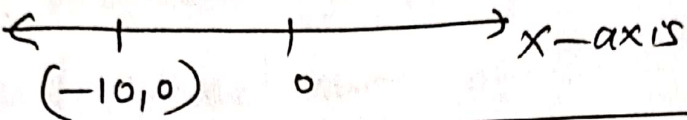
FOUNDATION (V₂) ①

Class: VIII, MATHEMATICS

4. INTRODUCTION TO GRAPHS

TEACHING TASK (JEE MAINS)

01. $(a, b) \in \Pi \rightarrow a < 0, b > 0$ Ans: C

02.  Ans: B

03.
$$\begin{cases} x+3=2 \\ x=-1 \end{cases} \quad \begin{cases} 2-y=6 \\ y=2-6=-4 \end{cases}$$
 Ans: —

04. $(-5, 3)$ and $(-5, x)$
Given $-5+3 = -5+x$
 $\Rightarrow x = 3$ Ans: D

05. $A(10, 5), B(-7, -4)$
$$AB = \sqrt{(-7-10)^2 + (-4-5)^2}$$
$$= \sqrt{289 + 81} = \sqrt{370} \quad \text{Ans: B}$$

06. Let the investment of each company in 2005 be Rs. x

Income of A : Income of B

$\Rightarrow x + 70\% \text{ of } x : x + 55\% \text{ of } x$

$\Rightarrow x + \frac{70}{100} \times x : x + \frac{55}{100} \times x$

$= \frac{17x}{10} : \frac{31x}{20}$

$= 34 : 31$

Ans: C



07. Let investment of A in 2009 be Rs. x (2)
Investment of B = 50% of Rs. x

$$= \text{Rs.} \left(x \times \frac{50}{100} \right) = \text{Rs.} \frac{x}{2}$$

$$\therefore x + \frac{x}{2} = 27 \text{ Lakhs}$$

$$\Rightarrow x = 18 \text{ Lakhs}$$

Investment of A in 2009 = Rs. 18 Lakhs

and investment of B = Rs. 9 Lakhs

$$\text{Profit of A} = 18 \text{ Lakhs} \times \frac{75}{100}$$

$$= 13.50 \text{ Lakhs}$$

$$\text{Profit of B} = \text{Rs.} \left(9 \text{ Lakhs} \times \frac{80}{100} \right)$$

$$= 7.20 \text{ Lakhs}$$

Total profit of A and B

$$= 13.50 + 7.20$$

$$= \text{Rs.} 20.70 \text{ Lakhs}$$

Ans: B

08 Investment of A in 2007

= Rs. 12 Lakhs and profit % = 45%

Income of A in 2007

$$= \text{Rs.} \left(\frac{145}{100} \times 12 \right) = 17.4 \text{ Lakhs}$$

Amount invested by A in 2008

$$= \frac{100}{160} \times 17.4 = \text{Rs.} 10,87,500$$

Ans: A

09 Investment of B in 2004 = 12 Lakhs (3)
~~Investment~~ ^{Cost} of B in 2004

$$= \text{Rs.} \left(\frac{155}{100} \times 12 \text{ Lakhs} \right)$$

$$= \text{Rs.} 18.6 \text{ Lakhs}$$
Profit earned in 2005

$$= \text{Rs.} \left(\frac{55}{100} \times 18.6 \right)$$

$$= \text{Rs.} 10.23 \text{ Lakhs} \quad \text{Ans. C}$$

10. Let the investment of A in 2008 be Rs. x
Then $\frac{160}{100} \times x = 24 \Rightarrow x = \text{Rs.} 15 \text{ Lakhs}$

Investment of A in 2008 = 15 Lakhs
Profit of A in 2008 = $(24 - 15)$ Lakhs
 $= \text{Rs.} 9 \text{ Lakhs}$

Investment of A in 2007 = Investment
of A in 2008 = Rs. 15 Lakhs

Investment of A in 2007 = $\frac{45}{100} \times 15$
 $= 6.75 \text{ Lakhs}$

Difference between the profits of
A in 2007 and 2008

$= \text{Rs.} 9 - 6.75$
 $= \text{Rs.} 2.25 \text{ Lakhs}$

Ans: A

11. $(0, 10), (-3, 0), (2, 0)$

Ans: A, B, C

12. Origin $\in$ X-axis, Y-axis

Ans: A, B

13. Statement I: Conceptual (True) ④
Statement II: Conceptual (True) Ans: A
-
14. Statement I: Conceptual (True)
Statement II: Conceptual (True) Ans: A
-
15. Assertion: Conceptual (True)
Reason: Conceptual (True) Ans: A
-
16. Assertion: Conceptual (True)
Reason: Conceptual (True) Ans: A
-
17. Monday + Tuesday = $14 + 18 = 32$ Ans: C
-
18. Tuesday + Wednesday = $18 + 14 = 32$
 Total no. of Books = 112
 Ratio = $\frac{32}{112} = \frac{2}{7}$
 Ans: B
-
19. Conceptual
-
20. 6 PM Ans: A
-
21. 0 Ans: 0
-
22. 0 Ans: 0
-
23. a) $100 + 90 + 160 + 160 + 140 + 150 + 150 + 150$
 $= 1040$ (s)
-
- b) $20 + 40 + 50 + 60 + 70 + 100 + 120 + 120$
 $= 580$ (r)
- c) 89-90 years (q)
- d) 87-88 years (p) Ans: s, r, q, p

24. (i) 10% (x) | (iii) 6% (t) ⑤
 (ii) 12% (P) | (iv) 6% (t) Ans: x, P, t, t

LEARNERS TASK (CUES)

01. X-axis

Ans: A

02. Conceptual

Ans: B

03. -3

Ans: A

04. $y=3$ is parallel to X-axis

Ans: C

05. $|x|$

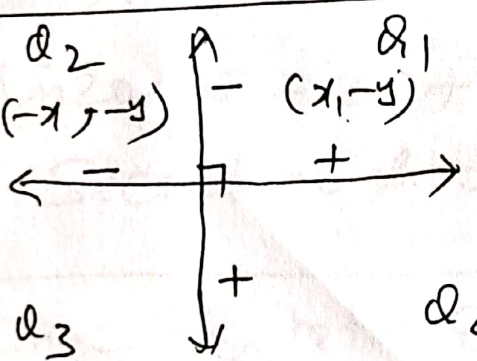
Ans: C

06. $x=0$

Ans: D

07. Both X-axis and Y-axis

Ans: C

08. Q_2 Q_1 $(-x_1, -y) \in Q_2$


Ans: A

09. $(-3, -7) \in Q_3$

Ans: C

10. No

Ans: B

JEE MAINS LEVEL

01. Two

Ans: B

02. Average expenditure of company C

$$= \frac{200 + 250 + 210 + 100 + 140}{5}$$

$$= 180$$

Ans: A

03. Company B = $190 + 170 = 360$ Lakhs ⑥
Company C = $210 + 140 = 350$ Lakhs
 $\therefore$ Difference = 10 Lakhs
= Rs 10,00,000 Ans: B

04. Company A = 210
Company B = 140
Ratio = $\frac{210}{140} = \frac{3}{2}$ Ans: C

05. In 2008 = $200 + 170 + 100 = 470$
In 2009 = $210 + 180 + 140 = 530$
In 2006 = $250 + 190 + 100 = 540$
In 2005 = $80 + 140 + 200 = 420$
Second highest = 540, Year = 2006
Ans: C

06. In 2006, total Expenditure of all
the three companies = 540.
Total Expenditure of A = $80 + 100 + 130 +$
 $200 + 210$
 $= 720$.

Total percentage = $\frac{720}{540} \times 100$
 $= 133\%$ Ans:

07. profit percentage = $\frac{\text{Income} - \text{Expenditure}}{\text{Expenditure}} \times 100$ (1)

$$\Rightarrow 65 = \frac{264 - \text{Expenditure}}{\text{Expenditure}} \times 100$$

$$\Rightarrow 65 = \frac{264 - x}{x} \times 100$$

$$\Rightarrow x = \text{Rs } 160 \text{ Crores}$$

$\therefore$ ten's digit = 6

Ans: C

08. profit percentage in 1998 = 65

profit percentage in 1999 = 70

Difference = 5%

Ans: C

09. Total profit percentages = $40 + 55 + 45 + 65 + 70 + 60 = 335$

$$\therefore \text{Average} = \frac{335}{6} = 55 \frac{5}{6} = m \frac{n}{6}$$

$$\therefore n = 5$$

Ans: B

10. profit percentage in 1996 = 55%.

" " in 1999 = 70%.

Given profit percentage = $\frac{\text{Income} - \text{Expenditure}}{\text{Expenditure}} \times 100$

$$\therefore P = \frac{I - E}{E} \times 100$$

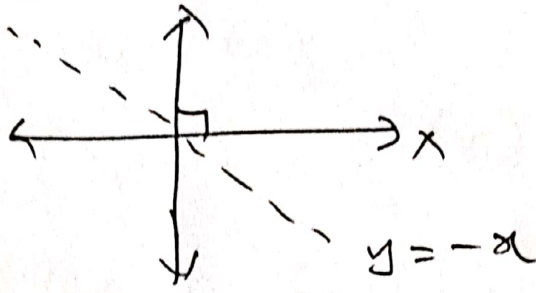
$$\Rightarrow E = \frac{I \times 100}{P + 100}$$

We have

$$\frac{I_1 \times 100}{55 + 100} = \frac{I_2 \times 100}{70 + 100}$$

$$\Rightarrow \frac{I_1}{I_2} = \frac{155}{170} = \frac{31}{34}$$

$$n - m - 8 = 34 - 31 - 8 = -5$$

11	$y \rightarrow$ ordinate, y -coordinate	Ans. B, C
12	 A) The origin B) II quadrant C) III quadrant D) IV, quadrant	Ans. A, B, D
13.	Statement I: Conceptual (True) Statement II: Conceptual (True False)	Ans. A
14.	Statement I: $p(6, 4)$ is 6 units from the y-axis (False) Statement II: Conceptual (True)	Ans. D
15	Assertion: Conceptual (True) Reason: Conceptual (True)	Ans. A
16	Assertion: Conceptual (True) Reason: Conceptual (False)	Ans. C
17.	AC is $\perp$ parallel to x -axis and passing through $(1, 2)$	Ans. A Ans. D
18	$A, B, E \rightarrow$ collinear, lie on a line	Ans. D
19.	Conceptual	Ans. A
20	$102^\circ F$	Ans. B
21.	2	Ans. 2
22	0	Ans. 0

23 i) $(2, 3) \in Q_1 (S)$

ii) $(-9, 3) \in Q_2 (P)$

iii) $(2, -7) \in Q_4 (R)$

iv) $(-4, -6) \in Q_3 (Q)$

Ans: S, P, R, Q

24

i) 15 mt (P)

ii) 25 mt (Q)

iii) 6 sec (R)

iv) 4 sec —

Ans: P, Q, R, —

⇒ THE END