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**CBSE TEST PAPER-01**

**Class X - Mathematics (Pair of Linear Equation)**

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**[ANSWERS]**

Ans01. (a)

Ans02. (c)

Ans03. (c)

Ans04. (b)

Ans05. Let the cost of one Kg of apple is  $x$  and one Kg of grapes is  $y$ .

According to question,

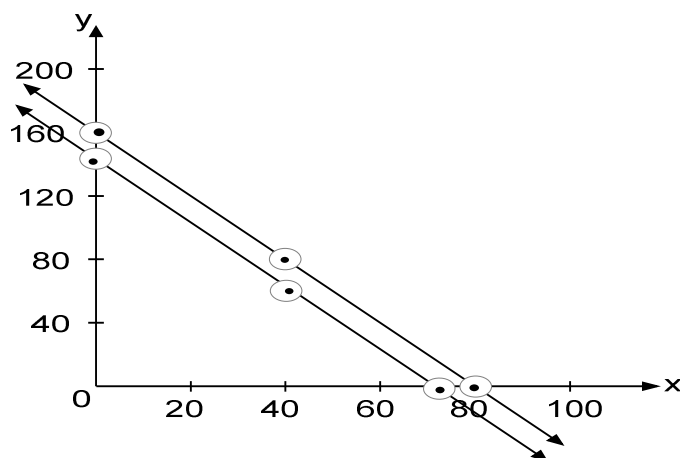
$$2x + y = 160 \text{ and } 4x + 2y = 300$$

$$2x + y = 160$$

x	0	80	40
Y	160	0	80

$$4x + 2y = 300$$

x	0	75	40
Y	150	0	70



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Ans06.  $kx + 3y = k - 3$

$$12x + ky = k$$

The system has no solution.

$$\text{If } \frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$$

$$\frac{k}{12} = \frac{3}{k} \neq \frac{k-3}{k}$$

$$k^2 = 36$$

$$\Rightarrow k = \pm 6 \quad (i)$$

$$\text{If } \frac{3}{k} \neq \frac{k-3}{k}$$

$$3k \neq k^2 - 3k$$

$$k^2 - 6k \neq 0$$

$$k(k-6) \neq 0$$

$$k \neq 6 \quad (ii)$$

$$\therefore k = -6$$

Ans07.  $x + y = 12 \dots (i)$

$$x - y = 8 \dots (ii)$$

on adding (i) and (ii),

$$2x = 20$$

$$\Rightarrow x = 10$$

$$\therefore 10 + y = 12$$

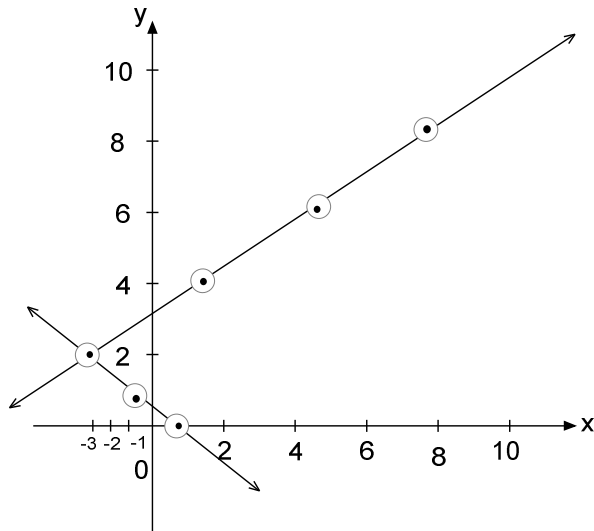
$$\Rightarrow y = 2$$

Ans08.  $x + 2y = 1 \quad \rightarrow (i)$

x	0	1	-1
y	1/2	0	1

$$x - 2y = -7 \quad \rightarrow (ii)$$

x	1	5	9
y	4	6	8



$$x = -3$$

$$y = 2$$

The straight line (i) meet the axis at  $\left(0, \frac{1}{2}\right)$  and  $(1, 0)$

and straight line (ii) meet the axis at  $\left(0, \frac{7}{2}\right)$  and  $(-7, 0)$ .

Ans09.  $23x - 29y = 98 \quad \rightarrow \quad (i)$

$$29x - 23y = 110 \quad \rightarrow \quad (ii)$$

on adding eq (i) and (ii)

$$52x - 52y = 208$$

$$\text{or } x - y = 4 \quad \rightarrow \quad (iii)$$

on subtracting

$$\begin{array}{r} 23x - 29y = 98 \\ \underline{29x - 23y = 110} \\ -6x - 6y = -12 \end{array}$$

$$x + y = 2 \quad \rightarrow \quad (iv)$$

on adding (iii) and (iv) we get

$$2x = 6 \text{ i.e. } x = 3$$

$$\therefore 3 + y = 2$$

$$y = -1$$

$$\therefore x = 3 \text{ and } y = -1$$

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Ans10. Let the number of coin of  
20 paise be 'x' and  
25 paise be 'y'

According to question

$$x + y = 50 \quad \rightarrow \quad (i)$$

and

$$20x + 25y = 1125 \quad \rightarrow \quad (ii)$$

or

$$4x + 5y = 225$$

$$\underline{4x + 4y = 200} \quad \left[ \text{from } (i) \right]$$

$$y = 25$$

$$x + y = 50$$

$$\Rightarrow x + 25 = 50 = 25$$

$\therefore$  Number of 20 paise coin = 25

and number of 25 paise coin = 25

Ans11. Let the present age of A = x years  
and B = y years

According to question,

$$x + y = 48 \quad \rightarrow \quad (i)$$

$$x = 5[y - (x - y)]$$

$$x = 5[2y - x]$$

$$x = 10y - 5x$$

$$3x = 5y$$

$$3(48 - y) = 5y$$

$$\Rightarrow y = 18 \text{ years}$$

$$\text{and } x = 48 - 18 \text{ years}$$

$$x = 30 \text{ years}$$

Ans12. Let the speed of boat is x km/h in still water  
and stream y km/h

According to question,

$$\frac{30}{x - y} + \frac{44}{x + y} = 10$$

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and  $\frac{40}{x-y} + \frac{55}{x+y} = 13$

Let  $\frac{1}{x-y} = u$  and  $\frac{1}{x+y} = v$

$$30u + 44v = 10 \quad \rightarrow \quad (i)$$

$$40u + 55v = 13 \quad \rightarrow \quad (ii)$$

on solving eq (i) and (ii) we get,

$$u = \frac{1}{5} \Rightarrow x - y = 5 \quad \rightarrow \quad (iii)$$

$$v = \frac{1}{11} \Rightarrow x + y = 11 \quad \rightarrow \quad (iv)$$

on solving eq (iii) and (iv) we get,

$$x = 8 \text{ km / h}$$

$$y = 3 \text{ km / h}$$