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CBSE Class 10-Mathematics: Chapter – 3 Pair of Linear Equation in Two Variables Part 7 (For CBSE, ICSE, IAS, NET, NRA 2022)

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2 Mark Questions

Question 1:

Half the perimeter of a rectangle garden, whose length is $4m$ more than its width, is $36m$. Find the dimensions of the garden.

Answer:

Let length of rectangular garden = x metres

Let width of rectangular garden = y metres

According to given conditions, perimeter = $36m$

$$\Rightarrow x + y = 36 \dots (i)$$

And $x = y + 4$

$$\Rightarrow x - y = 4 \dots (ii)$$

Adding eq. (i) and (ii) ,

$$2x = 40$$

$$\Rightarrow x = 20m$$

Subtracting eq. (ii) from eq. (i) ,

$$2y = 32$$

$$\Rightarrow y = 16m$$

Hence, length = $20m$ and width = $16m$

Question 2:

Draw the graphs of the equations $x - y + 1 = 0$ and $3x + 2y - 12 = 0$. Determine the coordinates of the vertices of the triangle formed by these lines and the x - axis and shade the triangular region.

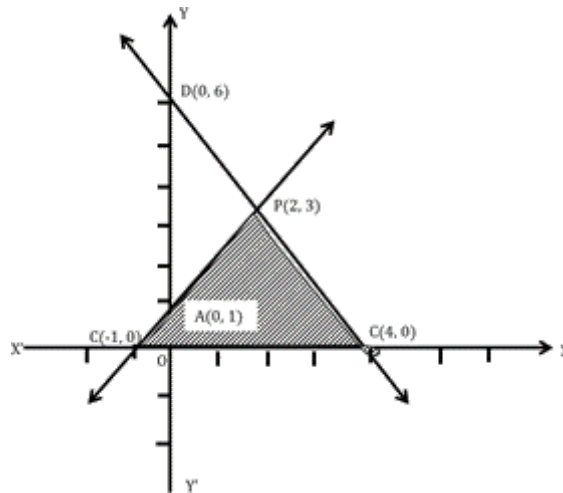
Answer:

For equation $x - y + 1 = 0$, we have following points which lie on the line

x	0	-1
y	1	0
<i>Points Which Lie on the Line</i>		

For equation $3x + 2y - 12 = 0$, we have following points which lie on the line

x	4	0
y	0	6
<i>Points Which Lie on the Line</i>		



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We can see from the graphs that points of intersection of the lines with the x – axis are $(1,0)$, $(2,3)$ and $(4,0)$.

Question 3:

The age of two friends Ani and Biju differ by 3 years. Ani's father Dharam is twice as old as Ani and Biju is twice as old as his sister Cathy. The ages of Cathy and Dharam differ by 30 years. Find the ages of Ani and Biju.

Answer:

Let the age of Ani and Biju be x years and y years, respectively.

Age of Dharam = $2x$ years and Age of Cathy = $\frac{y}{2}$ years

According to question,

$$x - y = 3 \dots (1)$$

And $2x - \frac{y}{2} = 30$

$$\Rightarrow 4x - y = 60 \dots (2)$$

Subtracting (1) from (2), we obtain

$$3x = 60 - 3 = 57$$

$$x = \text{Age of Ani} = 19 \text{ years}$$

Age of Biju = $19 - 3 = 16$ years Again, According to question,

$$y - x = 3 \dots (3)$$

And $4x - y = 60 \dots (4)$

$$\Rightarrow 4x - y = 60 \dots (4)$$

Adding (3) and (4), we obtain:

$$3x = 63$$

$$x = 21$$

Age of Ani = 21 years Age of Biju = $21 + 3 = 24$ years