

Math Revision - 1

DEVEN JADHAV

X C Roll No. 10

1. The 2 equations are:

$$4x - 3y = 9$$

$$2x + ky = 11$$

for no solution, $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$

$$a_1 = 4, a_2 = 2, b_1 = -3, b_2 = k, c_1 = -9, c_2 = -11$$

$$\frac{4}{2} = \frac{-3}{2} k; k = \frac{-3}{2}$$

\therefore value of k is $\frac{-3}{2}$

2. The 2 equations are \rightarrow

$$x + 8y = 6, \quad 2x - 3y = 12$$

$$a_1 = 1, b_1 = 3, c_1 = -6$$

$$a_2 = 2, b_2 = -3, c_2 = -12$$

$$\frac{a_1}{a_2} = \frac{1}{2}, \frac{b_1}{b_2} = \frac{-1}{-3}$$

$\therefore \frac{a_1}{a_2} \neq \frac{b_1}{b_2} \Rightarrow$ They are intersecting lines.

for first equation, $x + 3y = 6$

$$\Rightarrow y = \frac{6-x}{3} \Rightarrow x \quad 0 \quad 3 \quad -3$$

$$y \quad 2 \quad 1 \quad 3$$

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for second equation

$$2x - 3y = 12$$

$$\Rightarrow y = \frac{2x - 12}{3} \quad x \quad 0 \quad 3 \quad 3/2$$

$$y \quad -4 \quad -2 \quad -3$$

* First line intersects y axis at (0, 2)
Second line intersects y axis at (0, -4)

3. Let age of 1st son be x.

age of 2nd son = x

age of 3rd father = x

$$\therefore 2(x + y) = 2$$

\therefore after 20 years, by given condition,

$$x + 20 + y + 20 = 2 + 20$$

$$x + y + 20 = 2$$

$$2x + 2y = 2$$

$$\therefore x + y = 20$$

$$\therefore \text{The age of father} = 2(x + y)$$

$$= 2 \times 20$$

$$= 40$$

$$\therefore \text{Age of father} = 40$$

