

$$\frac{x+3}{x^2-2x+1} = \frac{x-2}{x-1} + \frac{4}{(x-1)^2}$$

$$\frac{x+3}{(x-1)^2} = \frac{x-2}{x-1} + \frac{4}{(x-1)^2} \quad \text{C.E. } x \neq 1$$

$$\cancel{D} \frac{x+3}{\cancel{(x-1)^2}} = \frac{(x-2)(x-1)+4}{\cancel{(x-1)^2}} \quad \cancel{D}$$

$$x+3 = x^2 - x - 2x + 2 + 4$$

$$x + \cancel{3} - \cancel{x^2} + x + 2x - \cancel{2} - \cancel{4}$$

$$-3 + 4x - x^2 = 0$$

$$-x^2 + 4x - 3 = 0$$

$$-x^2 + 3x + 1x - 3 = 0$$

$$-x(x-1) + 3(x-1)$$

$$(-x+3)(x-1) = 0 \Rightarrow \begin{array}{l} -x+3=0 \quad \vee \quad x-1=0 \\ \Downarrow \quad \quad \quad \Downarrow \\ x=3 \quad \quad \quad x=1 \end{array}$$

NON ACCETTABILE

$$S = \{3\}$$

$$\frac{x}{x-5} - \frac{3}{2x} = \frac{15+7x}{2x^2-10x}$$

$$\frac{x}{x-5} - \frac{3}{2x} = \frac{15+7x}{2x(x-5)} \quad \text{CE} \rightarrow x \neq 0 \wedge x \neq 5$$

$$\cancel{D.} \frac{2x^2 - 3x + 15}{\cancel{2x(x-5)}} = \frac{15+7x}{\cancel{2x(x-5)}} \quad \cancel{D}$$

$$2x^2 - 10x = 0$$

$$2x(x-5) = 0$$

$$x = 0 \vee x = 5$$

non accettabile

$$S = \emptyset$$

$$\frac{-4x^2}{x+2} + \frac{2}{x-2} = \frac{5-4x^3}{x^2-4}$$

$$C.E. \Rightarrow x \neq 2 \wedge x \neq -2$$

$$\frac{-4x^2}{x+2} + \frac{2}{x-2} = \frac{5-4x^3}{(x-2)(x+2)}$$

$$\textcircled{D} \frac{-4x^2(x-2) + 2(x+2)}{\cancel{(x+2)(x-2)}} = \frac{5-4x^3}{\cancel{(x-2)(x+2)}} \textcircled{D}$$

$$\cancel{-4x^3} + 8x^2 + 2x + 4 = 5 - \cancel{4x^3}$$

$$8x^2 + 2x - 1 = 0$$

$$\begin{aligned} a &= 8 \\ b &= 2 \\ c &= -1 \end{aligned}$$

$$\Delta = b^2 - 4ac = 4 - 4(-8) = 4 + 32 = 36$$

$$X_{1,2} = \frac{-b \pm \sqrt{\Delta}}{2a}$$

$$X_1 = \frac{-b + \sqrt{\Delta}}{2a} = \frac{-2 + \sqrt{36}}{16} = \frac{-2 + 6}{16} = \frac{4}{16} = \frac{1}{4}$$

$$X_2 = \frac{-b - \sqrt{\Delta}}{2a} = \frac{-2 - \sqrt{36}}{16} = \frac{-2 - 6}{16} = \frac{-8}{16} = -\frac{1}{2}$$

$$S = \left\{ -\frac{1}{2}, \frac{1}{4} \right\}$$

$$\frac{x}{x-3} - \frac{4}{x+3} = \frac{21-x}{x^2-9}$$

$$C.E \Rightarrow x \neq 3 \wedge x \neq -3$$

$$\frac{x}{x-3} - \frac{4}{x+3} = \frac{21-x}{(x-3)(x+3)}$$

$$\cancel{D} \cdot \frac{x^2+3x-4x+12}{\cancel{(x-3)}(x+3)} = \frac{21-x}{\cancel{(x-3)}(x+3)} \cdot \cancel{D}$$

$$x^2+3x-4x+12-21+x=0$$

$$x^2-9=0$$

$$(x+3)(x-3)=0$$

$$x=3 \text{ non accettabile}$$

$$x=-3$$

$$S = \emptyset$$

$$\frac{1}{x} + 1 = \frac{4}{x+1} \quad \text{C.E}$$

$$x \neq 0$$

$$\text{D} \frac{x+1 + x(x+1)}{x(x+1)} = \frac{4x}{x(x+1)} \quad \text{D} \quad x \neq -1$$

$$x + 1 + x^2 + x = 4x$$

$$x + 1 + x^2 + x - 4x = 0$$

$$x^2 - 2x + 1 = 0$$

$$(x-1)^2 = 0$$

$$x = 1 \text{ (doppia)}$$

$$S = \{1 \text{ (doppia)}\}$$

$$3x + 2y = 0$$

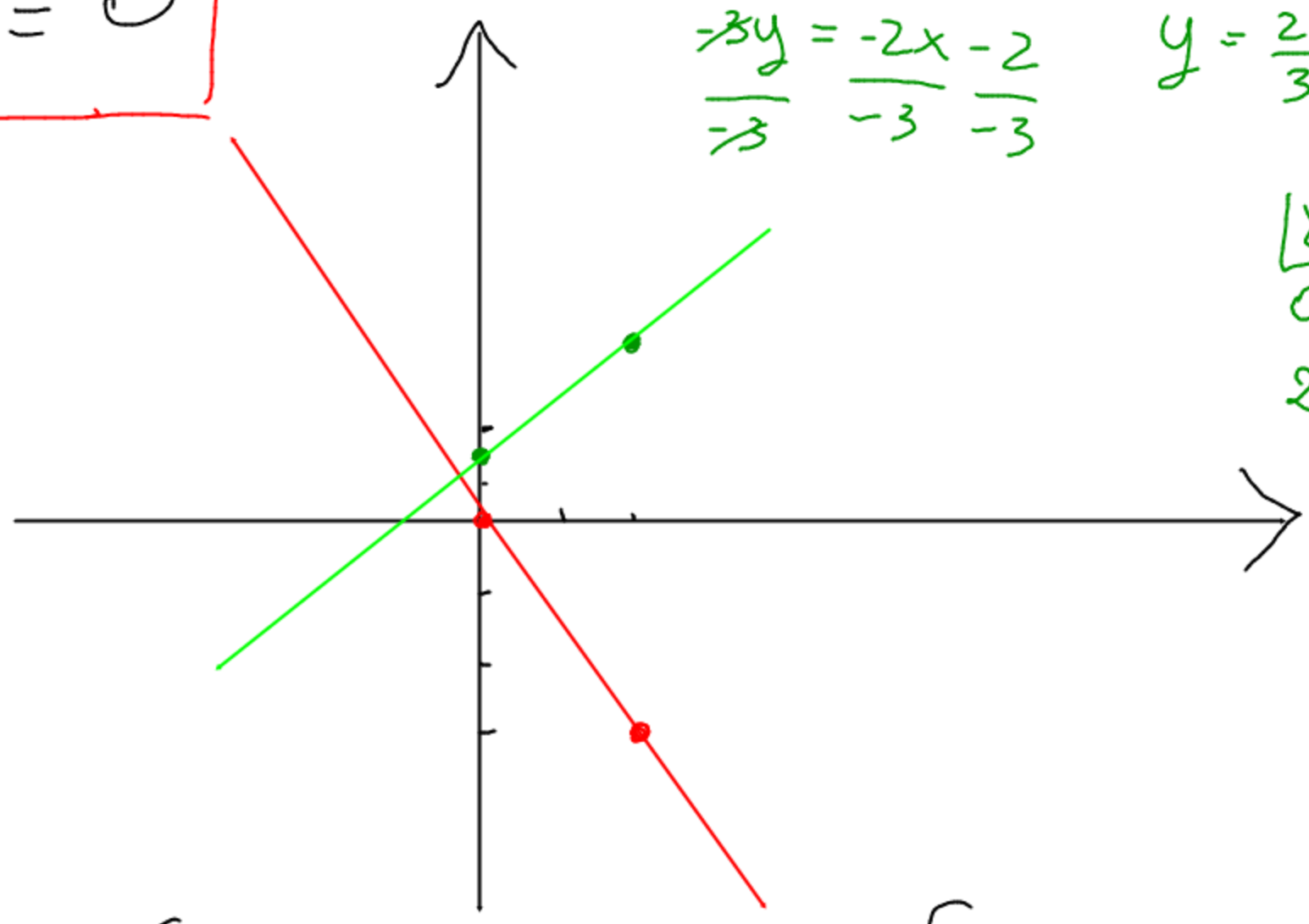
$$y = -\frac{3}{2}x$$

x	y
0	0
2	-3

$$2x - 3y + 2 = 0$$

$$\begin{aligned} -3y &= -2x - 2 \\ \frac{-3y}{-3} &= \frac{-2x - 2}{-3} \\ y &= \frac{2x}{3} + \frac{2}{3} \end{aligned}$$

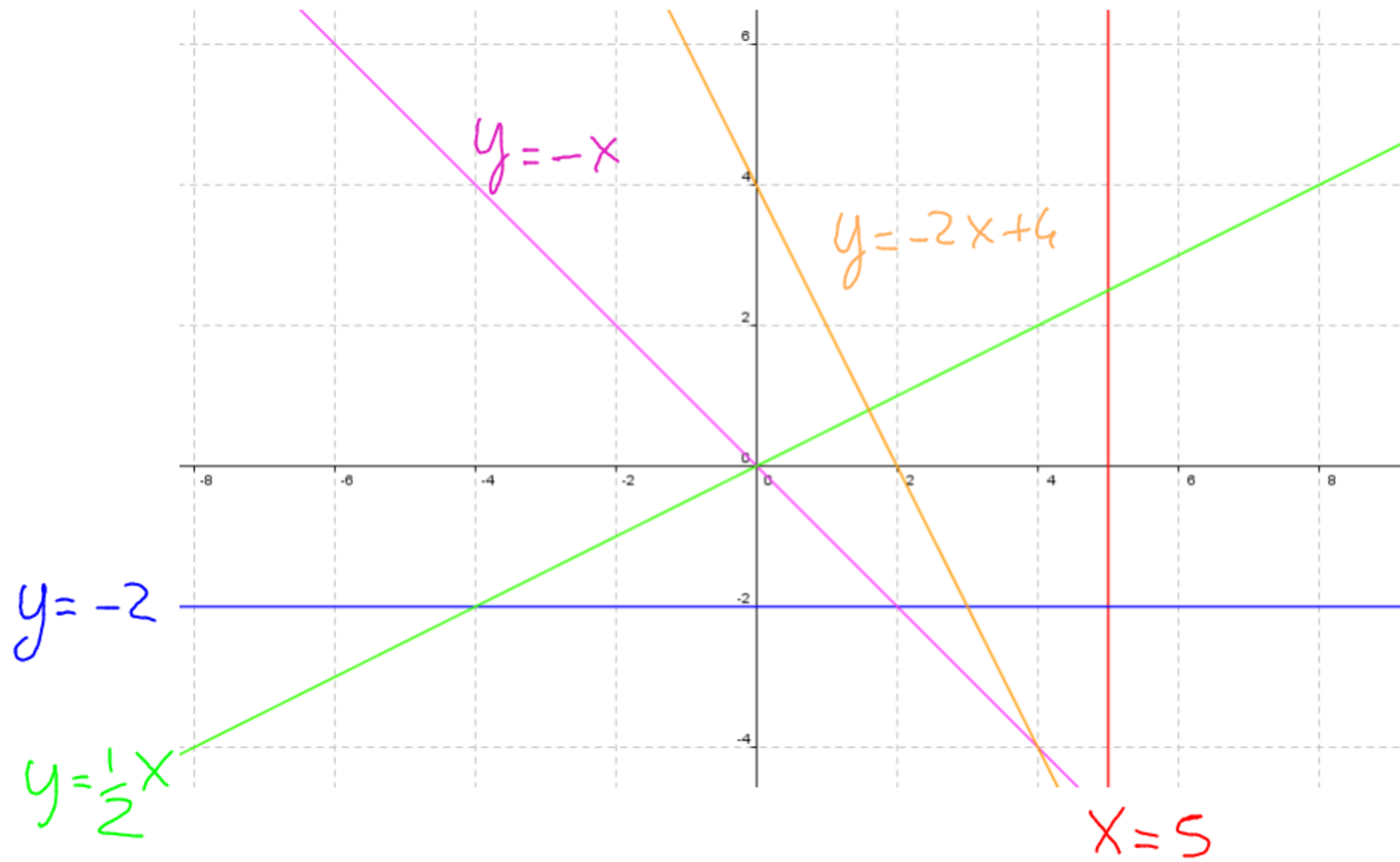
x	y
0	$\frac{2}{3}$
2	2



$$\begin{cases} 3x + 2y = 0 \\ 2x - 3y + 2 = 0 \end{cases} \Rightarrow \begin{cases} 3x = -2y \Rightarrow x = -\frac{2}{3}y \\ 2(-\frac{2}{3}y) - 3y + 2 = 0 \end{cases} \begin{cases} \text{idem} \\ -\frac{4}{3}y - 3y + 2 = 0 \end{cases}$$

$$\begin{cases} \text{idem} \\ \frac{-4y - 9y + 6}{3} = 0 \Rightarrow \frac{-13y + 6}{3} \end{cases}$$

$$\begin{cases} x = -\frac{2}{3}y \Rightarrow x = -\frac{2}{3}(\frac{6}{13}) \Rightarrow x = -\frac{4}{13} \\ y = \frac{6}{13} \end{cases} \quad P = \left(-\frac{4}{13}, \frac{6}{13}\right)$$



$$\frac{\sqrt{20} + \sqrt{45}}{3\sqrt{5} - 1} = \frac{\sqrt{2^2 \sqrt{5}} + \sqrt{5} \sqrt{3^2}}{3\sqrt{5} - 1}$$

$$\frac{2\sqrt{5} + 3\sqrt{5}}{3\sqrt{5} - 1} = \frac{5\sqrt{5}}{3\sqrt{5} - 1} \cdot \frac{3\sqrt{5} + 1}{3\sqrt{5} + 1}$$

$$\frac{15\sqrt{5}^2 + 5\sqrt{5}}{9\sqrt{5}^2 - 3\sqrt{5} + 3\sqrt{5} - 1} = \frac{75 + 5\sqrt{5}}{44}$$