

$$\underline{\underline{1)}} \quad a) \quad 6x-2 - \frac{x-1}{3} = 3x-7$$

$$3 \frac{(6x-2)}{3} - \frac{(x-1)}{3} = \frac{9x-21}{3}$$

$$18x-6 - x+1 = 9x-21$$

$$18x-x-9x = -21+6-1$$

$$8x = -16 \quad \Rightarrow \quad \boxed{x = -2}$$

$$b) \quad 3x-2 = x+5$$

$$3x-x = 2+5$$

$$2x = 7 \quad \Rightarrow \quad \boxed{x = \frac{7}{2}}$$

$$c) \quad \frac{x}{3} - \frac{2x-1}{6} = 2 \left(-x + \frac{53}{12} \right)$$

$$\frac{2x}{6} - \frac{(2x-1)}{6} = -\frac{12x}{6} + \frac{53}{6}$$

$$2x - 2x + 1 = -12x + 53$$

$$12x = 52 \quad \Rightarrow \quad x = \frac{52}{12} = \frac{26}{6} = \frac{13}{3}$$

$$\underline{\underline{2)}} \quad a) \quad x^2 - 10x + 21 = 0 \quad x = \frac{10 \pm \sqrt{100-84}}{2} = \frac{10 \pm \sqrt{16}}{2} = \frac{10 \pm 4}{2}$$

$$\Rightarrow \begin{cases} \frac{10+4}{2} = 7 \\ \frac{10-4}{2} = 3 \end{cases}$$

$$\boxed{x=7}; \quad \boxed{x=3}$$

$$b) \quad -12x^2 + 8x = 0$$

$$x(-12x+8) = 0 \quad \begin{cases} \boxed{x=0} \\ -12x+8=0 \Rightarrow x = \frac{8}{12} = \frac{2}{3} \end{cases}$$

$$-12x+8=0 \Rightarrow x = \frac{8}{12} = \frac{2}{3}$$

3

$$4x^4 - 37x^2 + 9 = 0 \quad \text{llamamos } x^2 = p$$

$$4p^2 - 37p + 9 = 0$$

$$p = \frac{37 \pm \sqrt{1369 - 144}}{8} = \frac{37 \pm \sqrt{1225}}{8} = \frac{37 \pm 35}{8} \begin{matrix} \nearrow 9 \\ \searrow \frac{1}{4} \end{matrix}$$

luego $x^2 = 9 \Rightarrow \boxed{x = \pm 3}$

$$x^2 = \frac{1}{4} \Rightarrow \boxed{x = \pm \frac{1}{2}}$$

4

a) $2x - 3y = -1 \Rightarrow x = \frac{-1 + 3y}{2}$

$$3x + 2y = 5$$

Substituyendo: $3\left(\frac{-1 + 3y}{2}\right) + 2y = 5$

$$\Rightarrow -3 + 9y + 4y = 10 \Rightarrow 13y = 13 \Rightarrow \boxed{y = 1}; \boxed{x = 1}$$

b) $2x + y = 10 \Rightarrow y = 10 - 2x$

$$-3x - 2y = 16 \Rightarrow -2y = -16 + 3x \Rightarrow y = \frac{16 - 3x}{2} \quad \text{Igualación}$$

$$10 - 2x = \frac{16 - 3x}{2} \Rightarrow 20 - 4x = 16 - 3x \Rightarrow -x = -4 \quad \boxed{x = 4}; \boxed{y = 2}$$

c) $(5x + 4y = 5) \cdot 2 = 10x + 8y = 10$

$$(2x + 3y = 2) \cdot (-5) = -10x - 15y = -10$$

$$\frac{10x + 8y = 10}{-10x - 15y = -10} \Rightarrow \boxed{y = 0} \quad \boxed{x = 1}$$

5

$$5x + 3y = 7 \Rightarrow y = \frac{7}{3} - \frac{5}{3}x$$

$$2x - y = 5 \Rightarrow y = 2x - 5$$

x	$y = \frac{7}{3} - \frac{5}{3}x$
-2	$\frac{17}{3}$
-1	$\frac{12}{3}$

x	$y = 2x - 5$
-2	-9
-1	-6

