

$\pm 1, \pm 2, \pm 3, \pm 6$

2014) $P(x) = x^4 - x^3 - 7x^2 + x + 6 \mid P(x) = 0$

a) $\begin{array}{r|rrrrr} & 1 & -1 & -7 & 1 & 6 \end{array}$

$\begin{array}{r|rrrrr} 1 & & 1 & 0 & -7 & -6 \end{array}$

$\begin{array}{r|rrrrr} & 1 & 0 & -7 & -6 & 0 \end{array}$

$\begin{array}{r|rrrrr} -1 & & -1 & 1 & 6 & \end{array}$

$\begin{array}{r|rrrrr} & 1 & -1 & -6 & 0 & \end{array}$

$\begin{array}{r|rrrrr} 3 & & 3 & 6 & \end{array}$

$\begin{array}{r|rrrrr} & 1 & 2 & 10 & \end{array}$

$\begin{array}{r|rrrrr} -2 & & -2 & \end{array}$

$\begin{array}{r|rrrrr} & 1 & 0 & \end{array}$

$P(x) = (x-1)(x+1)(x-3)(x+2)$

b) $P(x) = 0$

SOLUCIONES:

$x-1=0 \Rightarrow x=1$

$x+1=0 \Rightarrow x=-1$

$x-3=0 \Rightarrow x=3$

$x+2=0 \Rightarrow x=-2$

2009) $P(x) = x^4 + 3x^3 - x^2 - 3x$ $(x-a)$

a) $\begin{array}{r|rrrrr} 1 & 1 & 3 & -1 & -3 & 0 \end{array}$ $P(x) = (x-1)(x+1)(x+3)(x-0)$

$\begin{array}{r|rrrrr} 1 & 1 & 4 & 3 & 0 & 0 \end{array}$

$\begin{array}{r|rrrrr} 1 & 1 & 4 & 3 & 0 & 0 \end{array}$

$\begin{array}{r|rrrr} -1 & 1 & -1 & -3 & 0 \end{array}$

$\begin{array}{r|rrrr} 1 & 1 & 3 & 0 & 0 \end{array}$

$\begin{array}{r|rrrr} -3 & 1 & 0 & 0 & 0 \end{array}$

$\begin{array}{r|rrrr} 1 & 1 & 0 & 0 & 0 \end{array}$

$\begin{array}{r|rrrr} 0 & 1 & 0 & 0 & 0 \end{array}$

$\begin{array}{r|rrrr} 1 & 1 & 0 & 0 & 0 \end{array}$

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

$P(x) = (x^3 + 3x^2 - x - 3) \cdot x$

b) $P(x) = 0$

Soluciones

$x-1=0 \Rightarrow \boxed{x=1}$

$x+1=0 \Rightarrow \boxed{x=-1}$

$x+3=0 \Rightarrow \boxed{x=-3}$

$\boxed{x=0}$

SUSTITUCIÓN

$$x + 2y = 4$$

$$-2x + 3y = 6$$

$$x = 4 - 2y = 4 - 2 \cdot 2 = 0$$

$$x = 0$$

$$-2(4 - 2y) + 3y = 6$$

$$-8 + 4y + 3y = 6$$

$$4y + 3y = 6 + 8$$

$$7y = 14$$

$$y = \frac{14}{7} = 2$$

$$\begin{aligned} a) \quad & 2x - 4y = 8 \\ & -10x + 6y = -4 \end{aligned}$$

$$2x = 8 + 4y \Rightarrow$$

$$x = \frac{8 + 4y}{2} = 4 + 2y$$

$$-10 \cdot (4 + 2y) + 6y = -4$$

$$-40 - 20y + 6y = -4$$

$$-40 + 4 = 20y - 6y$$

$$-36 = 14y$$

$$\frac{-36}{14} = y$$

$$y = \frac{-18}{7}$$

$$x = 4 + 2 \cdot \frac{-18}{7} = 4 - \frac{36}{7}$$

$$x = \frac{28 - 36}{7} = \frac{-8}{7}$$

$$y = -2.57$$

$$x = 4 + 2 \cdot (-2.57) = -1.14$$

$$\begin{array}{l} \text{b) } 4x - 5y = 6 \quad | \quad 4x = 6 + 5y \\ -7x + 8y = 9 \end{array} \quad x = \frac{6 + 5y}{4} = \frac{6}{4} + \frac{5y}{4} = 1.5 + 1.25y$$

$$= 7(1.5 + 1.25y) + 8y = 9$$

$$= 10.5 - 8.75y + 8y = 9$$

$$-8.75y + 8y = 9 - 10.5$$

$$-0.75y = -1.5$$

$$y = \frac{-1.5}{-0.75} = 2$$

$$\rightarrow x = 1.5 + 1.25 \cdot (-2) =$$

$$x = -1$$