

1. Resuelve las siguientes ecuaciones:

a)

$$\begin{aligned}
 6x - (7+x) &= 7 - 2x \\
 6x - 7 - x &= 7 - 2x \\
 6x - x + 2x &= 7 + 7 \\
 7x &= 14 \\
 x &= \frac{14}{7} \\
 \mathbf{x} &= \mathbf{2}
 \end{aligned}$$

b)

$$\begin{aligned}
 x + 37 &= 5(x - 3) \\
 x + 37 &= 5x - 15 \\
 x - 5x &= -15 - 37 \\
 -4x &= -52 \\
 x &= \frac{-52}{-4} \\
 \mathbf{x} &= \mathbf{13}
 \end{aligned}$$

c)

$$\begin{aligned}
 x + 2 &= 2(2x + 4) \\
 x + 2 &= 4x + 8 \\
 x - 4x &= 8 - 2 \\
 -3x &= 6 \\
 x &= \frac{6}{-3} \\
 \mathbf{x} &= \mathbf{-2}
 \end{aligned}$$

d)

$$\begin{aligned}
 15(x - 4) &= 2x - 5 \\
 15x - 60 &= 2x - 5 \\
 15x - 2x &= -5 + 60 \\
 13x &= 55 \\
 x &= \frac{55}{13} \\
 \mathbf{x} &= \mathbf{\frac{55}{13}}
 \end{aligned}$$

e)

$$\begin{aligned}
 5x - (3x - 1) &= -3 + 2x \\
 5x - 3x + 1 &= -3 + 2x \\
 5x - 3x - 2x &= -3 - 1 \\
 0 &= -4 \\
 \mathbf{\text{no hay solución}}
 \end{aligned}$$

f)

$$\begin{aligned}
 8x - (4x - 10) &= -3 + 2x \\
 8x - 4x + 10 &= -3 + 2x \\
 8x - 4x - 2x &= -3 - 10 \\
 2x &= -13 \\
 x &= \frac{-13}{2} \\
 \mathbf{x} &= \mathbf{\frac{-13}{2}}
 \end{aligned}$$

g)

$$\begin{aligned}
 15(x - 1) &= 4(x + 3) + 28 \\
 15x - 15 &= 4x + 12 + 28 \\
 15x - 4x &= 12 + 28 + 15 \\
 11x &= 55 \\
 x &= \frac{55}{11} \\
 \mathbf{x} &= \mathbf{5}
 \end{aligned}$$

h)

$$\begin{aligned}
 2x + 3(x - 1) &= 6(x - 3) + 13 \\
 2x + 3x - 3 &= 6x - 18 + 13 \\
 2x + 3x - 6x &= -18 + 13 + 3 \\
 -x &= -2 \\
 x &= \frac{-2}{-1} \\
 \mathbf{x} &= \mathbf{2}
 \end{aligned}$$

i)

$$\begin{aligned}
 4(5 - x) + 3x &= -8(2x - 2) + \\
 20 - 4x + 3x &= -16x + 16 + \\
 -4x + 3x + 16x &= 16 + 4 - 2 \\
 15x &= 0 \\
 \mathbf{x} &= \mathbf{0}
 \end{aligned}$$

j)

$$\begin{aligned}
 (15+x) + (12+x) &= 40+x \\
 15+x+12+x &= 40+x \\
 x+x-x &= 40-15-12 \\
 \mathbf{x} &= \mathbf{13}
 \end{aligned}$$

k)

$$\begin{aligned}
 3(4x - 1) - 2(5x - 3) &= 11 - 2x \\
 12x - 3 - 10x + 6 &= 11 - 2x \\
 12x - 10x + 2x &= 11 + 3 - 6 \\
 4x &= 8 \\
 x &= \frac{8}{4} \\
 \mathbf{x} &= \mathbf{2}
 \end{aligned}$$

l)

$$\begin{aligned}
 3x - 5 &= x + (5 + x) \\
 3x - x - x &= 5 + 5 \\
 \mathbf{x} &= \mathbf{10}
 \end{aligned}$$

m)

$$\begin{aligned}
 3x + 14 - 5(x - 3) &= 4(x + 3 - 7) \\
 3x + 14 - 5x + 15 &= 4x + 12 - 28 \\
 3x - 5x - 4x &= 12 - 28 - 14 - 15 \\
 -6x &= -45 \\
 x &= \frac{-45}{-6} \\
 \mathbf{x} &= \mathbf{\frac{15}{2}}
 \end{aligned}$$

n)

$$\begin{aligned}
 6x - 3 &= 2 - x \\
 6x + x &= 2 + 3 \\
 7x &= 5 \\
 x &= \frac{5}{7} \\
 \mathbf{x} &= \mathbf{\frac{5}{7}}
 \end{aligned}$$

ñ)

$$\begin{aligned}
 x + 4 &= -3x \\
 x + 3x &= -4 \\
 4x &= -4 \\
 x &= \frac{-4}{4} \\
 \mathbf{x} &= \mathbf{-1}
 \end{aligned}$$

o)

$$\begin{aligned}
 2x+5 &= -x-4 \\
 2x+x &= -4-5 \\
 3x &= -9 \\
 x &= \frac{-9}{3} \\
 \mathbf{x} &= \mathbf{-3}
 \end{aligned}$$

p)

$$\begin{aligned}
 4+(3+x) &= 2x \\
 4+3+x &= 2x \\
 x-2x &= -4-3 \\
 -x &= -7 \\
 \mathbf{x} &= \mathbf{7}
 \end{aligned}$$

q)

$$\begin{aligned}
 10x-3 &= -(-6-7x) \\
 10x-3 &= 6+7x \\
 10x-7x &= 6+3 \\
 3x &= 9 \\
 x &= \frac{9}{3} \\
 \mathbf{x} &= \mathbf{3}
 \end{aligned}$$

r)

$$\begin{aligned}
 (4-x)-2x &= -(3+x)-5 \\
 4-x-2x &= -3-x-5 \\
 -x-2x+x &= -3-5-4 \\
 -2x &= -12 \\
 x &= \frac{-12}{-2} \\
 \mathbf{x} &= \mathbf{6}
 \end{aligned}$$

s)

$$\begin{aligned}
 3(3+x) &= -2(-x-7) \\
 9+3x &= 2x+14 \\
 3x-2x &= 14-9 \\
 \mathbf{x} &= \mathbf{5}
 \end{aligned}$$

t)

$$\begin{aligned}
 6(x-1)+x &= 15 \\
 6x-6+x &= 15 \\
 6x+x &= 15+6 \\
 7x &= 21 \\
 x &= \frac{21}{7} \\
 \mathbf{x} &= \mathbf{3}
 \end{aligned}$$

u)

$$\begin{aligned}
 -x &= -3-(2x+1) \\
 -x &= -3-2x-1 \\
 -x+2x &= -3-1 \\
 \mathbf{x} &= \mathbf{-4}
 \end{aligned}$$