

Módulo 12 Segundo Medio

$$\begin{aligned} 1) \quad 5 [2x - 4(3x+1)] &= -10x + 20 \\ 5 [2x - 12x - 4] &= -10x + 20 \\ 10x - 60x - 20 &= -10x + 20 \\ -50x + 10x &= 20 + 20 \\ -40x &= 40 \quad /: -40 \\ \boxed{x = -1} \end{aligned}$$

$$\begin{aligned} 2) \quad x - 13 &= 4 [3x - 4(x-2)] \\ x - 13 &= 4 [3x - 4x + 8] \\ x - 13 &= 12x - 16x + 32 \\ x + 4x &= 32 + 13 \\ 5x &= 45 \quad /: 5 \\ \boxed{x = 9} \end{aligned}$$

$$\begin{aligned} 3) \quad 3 [6x - 5(x-3)] &= 15 - 3(x-5) \\ 3 [6x - 5x + 15] &= 15 - 3x + 15 \\ 18x - 15x + 45 &= 30 - 3x \\ 3x + 3x &= 30 - 45 \\ 6x &= -15 \quad /: 6 \\ x &= \frac{-15}{6} \quad /: 3 = \boxed{\frac{-5}{2} = x} \end{aligned}$$

$$\begin{aligned} 4) \quad 2x + 3(x-3) &= 6 [2x - 3(x-5)] \\ 2x + 3x - 9 &= 6 [2x - 3x + 15] \\ 5x - 9 &= 12x - 18x + 90 \\ 5x + 6x &= 90 + 9 \\ 11x &= 99 \quad /: 11 \\ \boxed{x = 9} \end{aligned}$$

$$\begin{aligned}
 f) \quad x + 4[3 - 2(x-1)] &= 5[x - 3(2x-4)] + 1 \\
 x + 4[3 - 2x + 2] &= 5[x - 6x + 12] + 1 \\
 x + 12 - 8x + 8 &= 5x - 30x + 60 + 1 \\
 -7x + 20 &= 61 - 25x \\
 -7x + 25x &= 61 - 20 \\
 18x &= 41 \quad /: 18
 \end{aligned}$$

$$\boxed{x = \frac{41}{18}}$$

$$\begin{aligned}
 g) \quad 3 - 2x + 4[3 + 5(x+1)] &= 10x - 7 \\
 3 - 2x + 4[3 + 5x + 5] &= 10x - 7 \\
 3 - 2x + 12 + 20x + 20 &= 10x - 7 \\
 35 + 18x &= 10x - 7 \\
 18x - 10x &= -7 - 35 \\
 8x &= -42 \quad /: 8
 \end{aligned}$$

$$x = \frac{-42}{8} \quad /: 2$$

$$\boxed{x = \frac{-21}{4}}$$