

Multi-Step Equations (Odds)

$$\begin{aligned} 1) \quad 6a + 5a &= -11 \\ 11a &= -11 \\ \frac{11a}{11} &= \frac{-11}{11} \text{ (div. prop. =)} \\ a &= -1 \end{aligned}$$

$$\begin{aligned} 3) \quad 4x + 6 + 3 &= 17 \\ 4x + 9 &= 17 \\ 4x + 9 - 9 &= 17 - 9 \text{ (subt. prop. =)} \\ 4x &= 8 \\ \frac{4x}{4} &= \frac{8}{4} \text{ (div. prop. =)} \\ x &= 2 \end{aligned}$$

$$\begin{aligned} 5) \quad 6r - 1 + 6r &= 11 \\ 12r - 1 &= 11 \\ 12r - 1 + 1 &= 11 + 1 \text{ (add. prop. =)} \\ 12r &= 12 \\ \frac{12r}{12} &= \frac{12}{12} \text{ (div. prop. =)} \\ r &= 1 \end{aligned}$$

$$\begin{aligned} 7) \quad -10 &= -14v + 14v \\ -10 &\neq 0 \\ &\text{no solution} \end{aligned}$$

$$\begin{aligned} 9) \quad 42 &= 8m + 13m \\ 42 &= 21m \\ \frac{42}{21} &= \frac{21m}{21} \text{ (div. prop. =)} \\ 2 &= m \end{aligned}$$

$$\begin{aligned} 11) \quad 18 &= 3(3x - 6) \\ 18 &= 9x - 18 \text{ (dist. prop. =)} \\ 18 + 18 &= 9x - 18 + 18 \text{ (add. prop. =)} \\ 36 &= 9x \\ \frac{36}{9} &= \frac{9x}{9} \text{ (div. prop. =)} \\ 4 &= x \end{aligned}$$

$$\begin{aligned} 13) \quad 37 &= -3 + 5(x + 6) \\ 37 &= -3 + 5x + 30 \text{ (dist. prop. =)} \\ 37 &= 27 + 5x \\ 37 - 27 &= 27 - 27 + 5x \text{ (subt. prop. =)} \\ 10 &= 5x \end{aligned}$$

$$\begin{aligned} \frac{10}{5} &= \frac{5x}{5} \text{ (div. prop. =)} \\ 2 &= x \end{aligned}$$

$$\begin{aligned}
 4(-x+4) &= 12 \\
 -4x+16 &= 12 \quad (\text{dist. prop.}) \\
 -4x+16-16 &= 12-16 \quad (\text{subt. prop.}) \\
 -4x &= -4 \\
 \frac{-4x}{-4} &= \frac{-4}{-4} \quad (\text{div. prop.}) \\
 x &= 1
 \end{aligned}$$

$$\begin{aligned}
 17) -6(1-5v) &= 54 \\
 -6+30v &= 54 \quad (\text{dist. prop.}) \\
 -6+6+30v &= 54+6 \quad (\text{add. prop.}) \\
 30v &= 60 \\
 \frac{30v}{30} &= \frac{60}{30} \quad (\text{div. prop.}) \\
 v &= 2
 \end{aligned}$$

$$\begin{aligned}
 10(1+3b) &= -20 \\
 10+30b &= -20 \quad (\text{dist. prop.}) \\
 10-10+30b &= -20-10 \quad (\text{subt. prop.}) \\
 30b &= -30 \\
 \frac{30b}{30} &= \frac{-30}{30} \quad (\text{div. prop.}) \\
 b &= -1
 \end{aligned}$$

$$\begin{aligned}
 21) 8(4k-4) &= -5k-32 \\
 32k-32 &= -5k-32 \quad (\text{dist. prop.}) \\
 32k+5k-32 &= -5k+5k-32 \quad (\text{add. prop.}) \\
 37k-32 &= -32 \\
 37k-32+32 &= -32+32 \quad (\text{add. prop.}) \\
 37k &= 0 \\
 \frac{37k}{37} &= \frac{0}{37} \quad (\text{div. prop.}) \\
 k &= 0
 \end{aligned}$$

$$\begin{aligned}
 8(1+5x)+5 &= 13+5x \\
 8+40x+5 &= 13+5x \quad (\text{dist. prop.}) \\
 40x+13 &= 13+5x \\
 40x-5x+13 &= 13+5x-5x \quad (\text{subt. prop.}) \\
 35x+13 &= 13 \\
 35x+13-13 &= 13-13 \quad (\text{subt. prop.}) \\
 35x &= 0 \\
 \frac{35x}{35} &= \frac{0}{35} \quad (\text{div. prop.}) \\
 x &= 0
 \end{aligned}$$

$$\begin{aligned}
 25) -5(4x-2) &= -2(3+6x) \\
 -20x+10 &= -6-12x \quad (\text{dist. prop.}) \\
 -20x+20x+10 &= -6-12x+20x \quad (\text{add. prop.}) \\
 10 &= -6+8x \\
 10+6 &= -6+6+8x \quad (\text{add. prop.}) \\
 16 &= 8x \\
 \frac{16}{8} &= \frac{8x}{8} \quad (\text{div. prop.}) \\
 2 &= x
 \end{aligned}$$