

# SOLVING LINEAR EQUATIONS

NOTE: AT ANY STEP COMBINE LIKE TERMS AND COMBINE NUMBERS

1. GET RID OF PARENTHESES
2. GET RID OF FRACTIONS
3. GET EVERYTHING WITH AN X ON ONE SIDE, NUMBERS ON OTHER SIDE
4. DIVIDE BOTH SIDES BY THE NUMBER IN FRONT OF X

#1

$$\begin{aligned} -7x + 8 &= -6 \\ -7x &= -6 - 8 \\ -7x &= -14 \\ \frac{-7x}{-7} &= \frac{-14}{-7} \\ x &= 2 \end{aligned}$$

#2

$$\begin{aligned} \frac{1}{4}x - 2 &= 1 \\ 4\left(\frac{1}{4}x\right) + 4(-2) &= 4(1) \\ x - 8 &= 4 \\ x &= 4 + 8 \\ x &= 12 \end{aligned}$$

#3

$$\begin{aligned} 9x + 3 - 4x &= 23 \\ 5x + 3 &= 23 \\ 5x &= 23 - 3 \\ 5x &= 20 \\ \frac{5x}{5} &= \frac{20}{5} \\ x &= 4 \end{aligned}$$

#4

$$\begin{aligned} 5(x - 2) &= -15 \\ 5x - 10 &= -15 \\ 5x &= -15 + 10 \\ 5x &= -5 \\ \frac{5x}{5} &= \frac{-5}{5} \\ x &= -1 \end{aligned}$$

#5

$$\begin{aligned} -4 &= 5 - (7 + 2y) \\ -4 &= 5 - 1(7 + 2y) \\ -4 &= 5 - 7 - 2y \\ -4 &= -2 - 2y \\ -4 + 2 &= -2 - 2y + 2 \\ -2 &= -2 - 2y \\ 2y &= -2 + 4 \\ 2y &= 2 \\ \frac{2y}{2} &= \frac{2}{2} \\ y &= 1 \end{aligned}$$

#6

$$\begin{aligned} -2(5 - 3x) &= 2x + 8 \\ -10 + 6x &= 2x + 8 \\ 6x - 2x &= 8 + 10 \\ 4x &= 18 \\ \frac{4x}{4} &= \frac{18}{4} \\ x &= \frac{9}{2} \end{aligned}$$