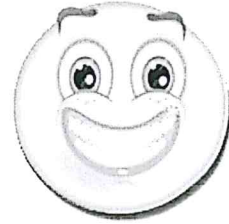


Math 8

# Solve for Variable

Name: Key



Show each step. Remember to use the Rule of Opposites to help with your "zero pairing".

$$\begin{aligned} 1. \quad 4x + 2 &= 14 \\ &\quad -2 \quad -2 \\ \hline 4x &= 12 \\ \frac{4x}{4} &= \frac{12}{4} \\ x &= 3 \end{aligned}$$

$$\begin{aligned} 6. \quad 12x + 1 &= 61 \\ &\quad -1 \quad -1 \\ \hline 12x &= 60 \\ \frac{12x}{12} &= \frac{60}{12} \\ x &= 5 \end{aligned}$$

$$\begin{aligned} 2. \quad 5y - 5 &= 10 \\ &\quad +5 \quad +5 \\ \hline 5y &= 15 \\ \frac{5y}{5} &= \frac{15}{5} \\ y &= 3 \end{aligned}$$

$$\begin{aligned} 7. \quad 3y - 8 &= 10 \\ &\quad +8 \quad +8 \\ \hline 3y &= 18 \\ \frac{3y}{3} &= \frac{18}{3} \\ y &= 6 \end{aligned}$$

$$\begin{aligned} 3. \quad 10x - 2 &= 32 \\ &\quad +2 \quad +2 \\ \hline 10x &= 30 \\ \frac{10x}{10} &= \frac{30}{10} \\ x &= 3 \end{aligned}$$

$$\begin{aligned} 8. \quad 7x + 2 &= 23 \\ &\quad -2 \quad -2 \\ \hline 7x &= 21 \\ \frac{7x}{7} &= \frac{21}{7} \\ x &= 3 \end{aligned}$$

$$\begin{aligned} 4. \quad x + (-12) &= 3 \\ &\quad +12 \quad +12 \\ \hline x &= 15 \end{aligned}$$

$$\begin{aligned} 9. \quad 9y - 5 &= 22 \\ &\quad +5 \quad +5 \\ \hline 9y &= 27 \\ \frac{9y}{9} &= \frac{27}{9} \\ y &= 3 \end{aligned}$$

$$\begin{aligned} 5. \quad 2y - 5 &= 3 \\ &\quad +5 \quad +5 \\ \hline 2y &= 8 \\ \frac{2y}{2} &= \frac{8}{2} \\ y &= 4 \end{aligned}$$

$$\begin{aligned} 10. \quad 8x + 2 &= 18 \\ &\quad -2 \quad -2 \\ \hline 8x &= 16 \\ \frac{8x}{8} &= \frac{16}{8} \\ x &= 2 \end{aligned}$$

$$11. 5y - 5 = 10y + 10$$

$$\begin{array}{r} 5y = 10y + 15 \\ -10y \quad -10y \end{array}$$

$$\frac{-5y}{-5} = \frac{15}{-5}$$

$$y = -3$$

$$12. 4x + 2 = 6x + 8$$

$$\begin{array}{r} 4x = 6x + 6 \\ -6x \quad -6x \end{array}$$

$$\frac{-2x}{-2} = \frac{6}{-2}$$

$$x = -3$$

$$13. 9y - 3 = 10y + 7$$

$$\begin{array}{r} 9y = 10y + 10 \\ -10y \quad -10y \end{array}$$

$$\frac{-1y}{-1} = \frac{10}{-1}$$

$$y = -10$$

$$14. 4x + 1 = 8x + 9$$

$$\begin{array}{r} 4x = 8x + 8 \\ -8x \quad -8x \end{array}$$

$$\frac{-4x}{-4} = \frac{8}{-4}$$

$$x = -2$$

$$15. 5y - 5 = 7y + 2$$

$$\begin{array}{r} 5y = 7y + 7 \\ -7y \quad -7y \end{array}$$

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

$$y = -3\frac{1}{2} \text{ or } -3.5$$

$$16. 4x + 2 = (-7x) + 24$$

$$\begin{array}{r} 4x = -7x + 22 \\ +7x \quad +7x \end{array}$$

$$\frac{11x}{11} = \frac{22}{11}$$

$$x = 2$$

$$17. 6y - 4 = 23 - 3y$$

$$\begin{array}{r} 6y = 27 - 3y \\ +3y \quad +3y \end{array}$$

$$\frac{9y}{9} = \frac{27}{9}$$

$$y = 3$$

$$18. 2x + 1 = 14x + 25$$

$$\begin{array}{r} 2x = 14x + 24 \\ -14x \quad -14x \end{array}$$

$$\frac{-12x}{-12} = \frac{24}{-12}$$

$$x = -2$$

$$19. 5y - 3 = 3y + 7$$

$$\begin{array}{r} 5y = 3y + 10 \\ -3y \quad -3y \end{array}$$

$$\frac{2y}{2} = \frac{10}{2}$$

$$y = 5$$

$$20. 7x + 2 = 14x - 12$$

$$\begin{array}{r} 7x = 14x - 14 \\ -14x \quad -14x \end{array}$$

$$\frac{-7x}{-7} = \frac{-14}{-7}$$

$$x = 2$$

$$21. 3y - 15 = 10 - 2y$$

$$\begin{array}{r} 3y = 25 - 2y \\ +2y \quad +2y \end{array}$$

$$\frac{5y}{5} = \frac{25}{5}$$

$$y = 5$$

$$22. 4x + 2 = 14 - 2x$$

$$\begin{array}{r} 4x = 12 - 2x \\ +2x \quad +2x \end{array}$$

$$\frac{6x}{6} = \frac{12}{6}$$

$$x = 2$$

$$23. 8y - 5 = 11 + 6y$$

$$\begin{array}{r} 8y = 16 + 6y \\ -6y \quad -6y \end{array}$$

$$\frac{2y}{2} = \frac{16}{2}$$

$$y = 8$$

$$24. 5x + 3 = 13 - 10x$$

$$\begin{array}{r} 5x = 10 - 10x \\ +10x \quad +10x \end{array}$$

$$\frac{15x}{15} = \frac{10}{15}$$

$$x = \frac{10}{15} = \frac{2}{3}$$