

1.3 SOLVING LINEAR EQUATIONS

Equation - MUST have an equal sign

Linear Equation - MUST have one variable and an equal sign (the graph will be a line)

EXAMPLES: Solve for the variable.

1. $x - 9 = 15$

$$x = 6$$

2. $\frac{y}{-3} = \frac{36}{-3}$

$$y = -12$$

3. $12n - 3 = 4n + 21$

$$8n - 3 = 21$$

$$8n = 24$$

$$n = 3$$

4. $5(m - 2) = -4(2m + 7) + m$

$$5m - 10 = -8m - 28 + m$$

$$5m - 10 = -7m - 28$$

$$+7m \quad +7m$$

$$12m - 10 = -28$$

$$+10 \quad +10$$

$$\frac{12m}{12} = \frac{-18}{12}$$

$$m = \frac{-18 \div 6}{12 \div 6}$$

$$m = -\frac{3}{2}$$

$$5. \quad 6(3 - d) = -5(2d + 9) + 18$$

$$18 - 6d = -10d - 45 + 18$$

$$18 - 6d = -10d - 27$$

$$18 + 4d = -27$$

$$\frac{4d}{4} = \frac{-45}{4}$$

$$\boxed{d = -\frac{45}{4}}$$

$$6. \quad -1(g + 2) - 2g = -2(g + 1)$$

$$-g - 2 - 2g = -2g - 2$$

$$-3g - 2 = -2g - 2 \quad \text{or} \quad -3g - 2 = -2g - 2$$

$$-2 = g - 2$$

$$\boxed{g = 0}$$

$$-g - 2 = -2$$

$$-g = 0 \quad \boxed{g = 0}$$

$$7. \quad \frac{7}{2}p - 1 = 2p + 5$$

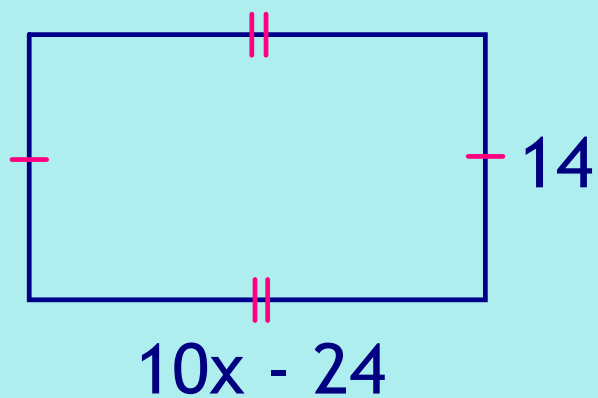
$$8. \quad \frac{2}{3}w + \frac{1}{5} = 2w - \frac{3}{10}$$

$$9. \quad \frac{3}{4} \left(\frac{4}{5} f - 2 \right) = \frac{11}{4}$$

$$10. \quad 3.1(k + 2) - 1.5k = 5.2(k - 4)$$

11. Find the dimensions of the figure.

Area = 504



12. Sally has two summer jobs. In the first job, she works 16 hours per week and earns \$7.50 per hour. In the second job, she works 20 hours per week. If she earns \$280 (before taxes), how much does she earn per hour at her second job?

13. Jerome earns a base yearly salary of \$20,000 as a car salesman. He also earns 4% of the total value of his yearly sales. If he earned \$40,920 in 2015, what was the total value of his yearly sales?