Equations Study Guide **Name:** _____

Solve each of the following questions below. Be sure to show ALL work algebraically & neatly. Write your final answer in the blank provided.

1. Solve for x. $\frac{2}{3}x + 5 = \frac{5}{7}x - 2$

1. _____

2. Solve for x. $\frac{a}{b}x - c = w$

2. _____

3. Solve for x. $6 - 3(2x - 5) = \frac{-1}{3}(18x + 6) - 5$

3. _____

4. Solve for x. $-\frac{3}{4} = \frac{x-5}{2x+7}$

4. _____

5. Solve for m. $x = \frac{m}{n} + p$

5. _____

6. Solve for C. $F = \frac{5}{9}(C - 32)$

6. _____

7. Solve for x. $3x + 4(6 - x) = 9(23 + 2x) - 10$

7. _____

8. The side length of a square measures 3x + 2 and the side lengths of a triangle are x, x, and 2x + 16. If the square and the triangle have the SAME perimeter, find the perimeter.

Equation: _____

8. _____

9. Find three consecutive odd integers such that twice the largest, minus the middle, is the same as 3 less than four times the smallest.

Equation: _____

9. _____

10. The perimeter of a rectangle is 154 inches. If the length of the rectangle is 17 inches greater than three times the width, find the AREA of the rectangle in square inches.

Equation: _____

10. _____

11. A triangle's second angle is half the first. The third angle is 9 less than twice the first. What are the measures of the three angles?

Equation: _____

11. $m\angle 1 =$ _____

$m\angle 2 =$ _____

$m\angle 3 =$ _____

12. Show two different ways to solve this equation:

$$12 = -4(x + 5) + 8$$

12. _____