Name_____ Pd_____ Date_____ **Section 1.R.3**

Solving Equations and Inequalities

Equation	Steps	Inequality
The sum of three times a number and five is fourteen. $3x + 5 = 14$ $-5 \quad -5$ $\frac{3x}{3} = \frac{9}{3}$ $x = 3$	**For Two-Step Solutions** After translating, 1) _____ 2) _____ For inequalities, graph solutions. Open:_____ Closed:_____	The difference of twice a number and three is less than seven.
$-4(2x + 1) - 4x = 8$ $-8x - 4 - 4x = 8$ $-12x - 4 = 8$ $+4 \quad +4$ $\frac{-12x}{-12} = \frac{12}{-12}$ $x = -1$	**For Multi-Step Solutions** What must you do FIRST? What type of operations do you use to isolate the variable? For inequalities, what happens when you multiply or divide by a negative number?	$3(t - 1) - 4t \geq -5$
The sum of four times a number and three is the same as the difference of two times a number and eleven. $4x + 3 = 2x - 11$ $-2x \quad -2x$ $2x + 3 = -11$ $-3 \quad -3$ $\frac{2x}{2} = \frac{-14}{2}$ $x = -7$	**For Variables on Both Sides** How do we get all the variables to the same side?	The difference of five times a number and one is greater than double the sum of a negative number and three.

Special Solutions - How many solutions does the equation have?

1) $2(k-3)-k=1+k-7$

2) $5t+1=5(t-1)+3$

3) $3(2x-5)=x+5(x+3)$

4) $m+3=3(2m+1)-5m$

Key Ideas:

- When the variables cancel out, you get special solutions.
- Identities (true statements) have _____.
- False statements have _____.