Name:_____ Date:_____

Math 9 HW Section 6.5 Solving Inequalities with Negative Values

1. What happens when you have an inequality and you divide both sides with a negative value?

2. Solve each of the following. Draw your solution on a number line

a) $-3x < 12$	b) $24 \geq -6x$	c) $\frac{-2x}{3} > 6$
d) $-8 \leq -4x$	e) $-16 > 4x$	f) $-20x \leq 4$

3. Solve each of the following. Show all your work and steps

a) $-3x + 4 < 14$	b) $4 - 5x < 34$
c) $\frac{-2}{3}x - 11 \geq 7$	d) $16 - \frac{4x}{7} < 6 - 2x$
e) $16 - 3x > 28 - 5x$	f) $12 \leq 3x - 18 - 6x$
g) $8(3 - 4x) \geq 40 - 12x$	h) $7x + 21 - 15x > -4x - 6 - 13x$

i) $7x-(6-x)>10(x-1)$	j) $8+x\le 3x-\left[7-(2-x)\right]$
k) $2(5-6x)\ge 12+3\left[2-4(2x-5)\right]$	L) $\frac{3}{4}(2x-5)+4>8-\frac{2}{5}(10x-15)$
m) $7-\frac{2}{3}(9x-2)>10-\frac{3}{2}(3x+1)$	n) $x^2\le 25$

4. Bob has a monthly budget of $300,000 to staff his company. The administration cost is $75,000 and each employee earns an average monthly salary of $4500. How many people can Bob hire each month? Write an equation for this inequality and state your variables.

5. A store makes $100 for every computer chip they sell. However, expenses cost $5000 plus $30 for every computer chip they make. How many computer chips do they need to sell to make a profit? State your variables and write an equation for this inequality.