Solving Multi-Step Inequalities

>	"Greater Than"	Shade to the right, open circle
≥	"Greater Than or Equal To" / "At Least"	Shade to the right, closed circle
<	"Less Than"	Shade to the left, open circle
≤	"Less Than or Equal To" / "At Most"	Shade to the left, closed circle

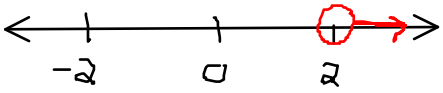
Directions: Solve each inequality and graph the solution.

1. $3y+6>12$

$-6\ \ -6$

$\frac{3y}{3} > \frac{6}{3}$

$y > 2$



2. $-6 \le -4+2z$

$+4\ \ +4$

$\frac{-2}{2} \le \frac{2z}{2}$

$-1 \le z$

$z \ge -1$

3. $8x-5 \ge -4x+1$

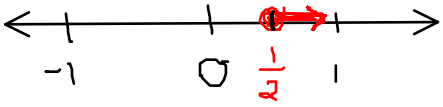
$+4x\ \ +4x$

$12x-5 \ge 1$

$+5\ \ +5$

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

$x \ge \frac{1}{2}$



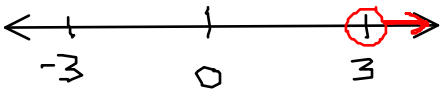
$\frac{6}{12} \div \frac{6}{6} = \frac{1}{2}$

$x \geq \frac{1}{2}$

4. $+5 - 6n < -13$
$+5 \quad -5$

$\frac{-6n}{-6} < \frac{-18}{-6}$

$n > 3$

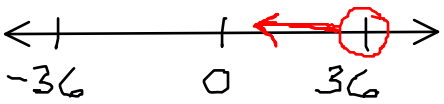


$-13 + 5 = -18$

5. $\frac{a}{6} - 4 < 2$
$+4 \quad +4$

$6 \cdot \frac{a}{6} < 6 \cdot 6$

$a < 36$



6. $-5 - \frac{a}{7} \geq -3$

$-5 + \frac{a}{-7} \geq -3$
$+5 \quad +5$

$(-7) \cdot \frac{a}{-7} \leq 2 \cdot (-7)$

$a \leq -14$