Solving Linear Inequalities

Overview of problems

Example Set: A

Sketch the graph of the inequalities

$x < 5$

$x \geq -7$

$x \leq 12$

$x > 4$

Example Set: B

Determine if the number is a solution to the inequality

$x \geq -6, \quad 8$

$x > 4, \quad 4$

$2x - 3 \leq -10, \quad 5$

$-5x + 10 > 2x + 1, \quad 2$

$3(x+2) \leq -4(x-1), \quad -3$

Example Set: C

Solve the inequality and graph the solution

$-2x < 10$

$3x \geq -15$

$x + 6 < 13$

$-4x - 1 \geq 7$

Example Set: D

Solve the inequality and graph the solution

$-x + 8 < 2(x - 8)$

$\frac{1}{2}x + 2 \geq 6$

$-\frac{1}{3}x - 9 < -12$

$\frac{2}{5}(x + 10) \geq -3(x - 1)$

Solving Linear Inequalities

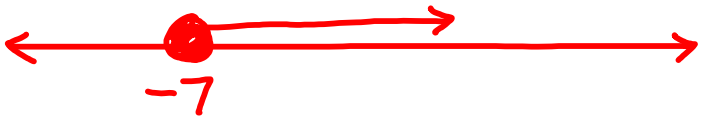
Overview of problems- KEY

Example Set: A

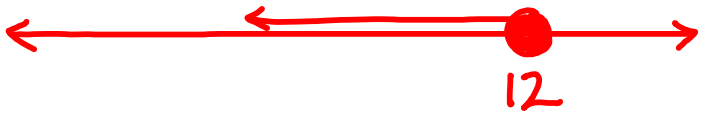
Sketch the graph of the inequalities

$x < 5$

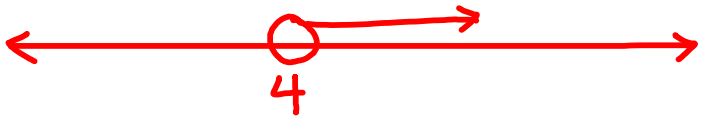
$x \geq -7$



$x \leq 12$



$x > 4$



Example Set: B

Determine if the number is a solution to the inequality

$x \geq -6$, 8 solution

$x > 4$, 4 not a solution

$2x - 3 \leq -10$, 5 not a solution

$-5x + 10 > 2x + 1$, 2 not a solution

$3(x+2) \leq -4(x-1)$, -3 solution

Example Set: C

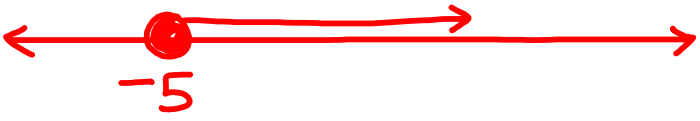
Solve the inequality and graph the solution

$-2x < 10$

$x > -5$

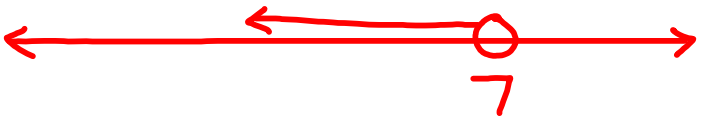
$3x \geq -15$

$x \geq -5$



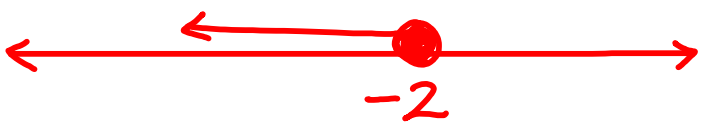
$x + 6 < 13$

$x < 7$



$-4x - 1 \geq 7$

$x \leq -2$

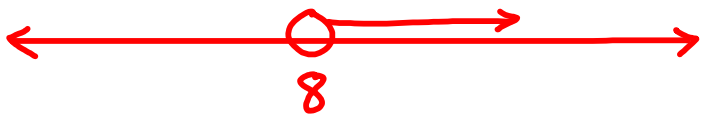


Example Set: D

Solve the inequality and graph the solution

$-x + 8 < 2(x - 8)$

$x > 8$

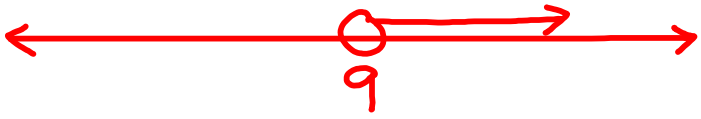


$\frac{1}{2}x + 2 \geq 6$

$x \geq 8$

$-\frac{1}{3}x - 9 < -12$

$x > 9$



$\frac{2}{5}(x + 10) \geq -3(x - 1)$

$x \geq -\frac{5}{17}$