

Linear Inequalities – Extra Practice

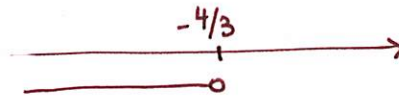
Solve the following inequalities and give the solutions as an interval.

a) $2x - 3 > 5x + 1$

$$2x - 5x > 3 + 1$$

$$-3x > 4$$

$$x < -\frac{4}{3}$$



solution: $(-\infty, -\frac{4}{3})$

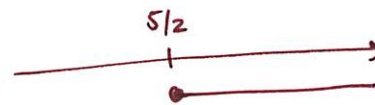
b) $3 - 2(x - 5) \leq 2x + 3$

$$3 - 2x + 10 \leq 2x + 3$$

$$-2x - 2x \leq -13 + 3$$

$$-4x \leq -10$$

$$x \geq \frac{5}{2}$$



solution: $[\frac{5}{2}, +\infty)$

c) $\frac{2}{3}(5x + 1) < \frac{1}{2}(3x - 6)$

$$4(5x + 1) < 3(3x - 6)$$

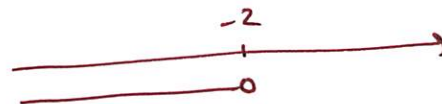
$$20x + 4 < 9x - 18$$

$$20x - 9x < -22$$

$$11x < -22$$

$$x < -\frac{22}{11}$$

$$x < -2$$



solution: $(-\infty, -2)$

d) $\frac{2x+5}{3} \geq \frac{4x-1}{5}$

$$5(2x + 5) \geq 3(4x - 1)$$

$$10x + 25 \geq 12x - 3$$

$$-2x \geq -28$$

$$x \leq 14$$



solution: $(-\infty, 14]$