

Teaching Notes for Algebra I

Homework #11

Overview: In this lesson, students will be graphing inequalities on a number line and on a coordinate plane.

Preparation: Watch video on “graphing on a number line,” and “little man.”

Classroom Examples:

- 1) Solve $-3x - 6 < 9$ and graph the answers on a number line.

$$-3x - 6 < 9$$

$$-3x < 15$$

$$x > -5$$

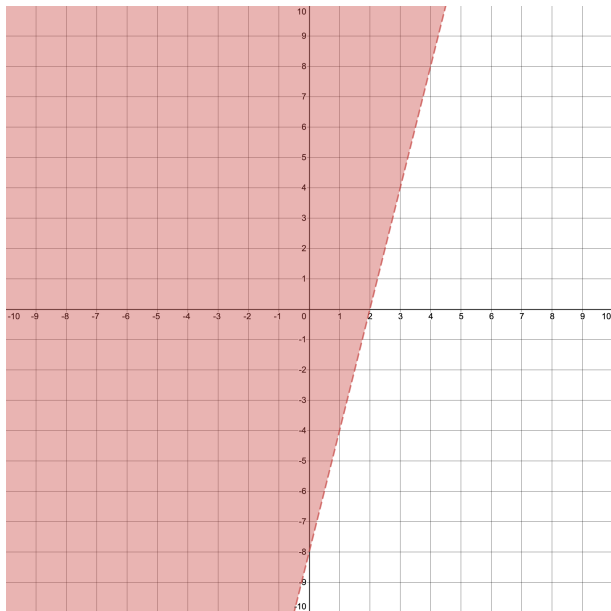
*graphed on number line in video

- 2) Graph the inequality $4x - y < 8$

$$4x - y < 8$$

$$-y < -4x + 8$$

$$y > 4x - 8$$



Teaching Notes for Algebra I

Homework #11

- 3) Solve $-(2x - 3) - 2^3 - (-1 - 1)^3 - 11x < 36 \div 6(-1 - 2) - 2(5x - 1) - 9^0$ and graph the answers on a number line.

$$-1(2x - 3) - 2^3 - 1(-2)^3 - 11x < 36 \div 6(-3) - 2(5x - 1) - 9^0$$

$$-1(2x - 3) - 8 - 1(-8) - 11x < 36 \div 6(-3) - 2(5x - 1) - 1$$

$$-2x + 3 - 8 + 8 - 11x < -24 - 10x + 2 - 1$$

$$-13x + 3 < -10x - 23$$

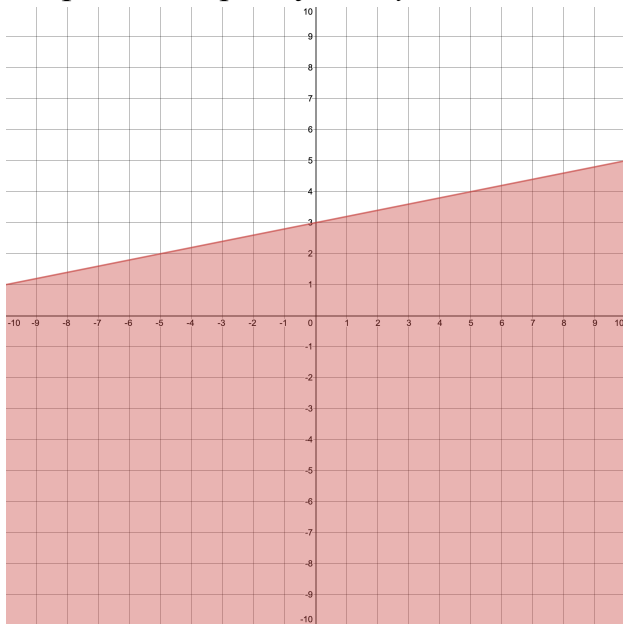
$$-3x + 3 < -23$$

$$-3x < -26$$

$$x > \frac{26}{3}$$

*graphed on number line in video

- 4) Graph the inequality $x - 5y \geq -15$



Teaching Notes for Algebra I

Homework #11

- 5) Solve $\frac{1}{8}x + \frac{1}{6} \geq \frac{5}{12}$ and graph the answers on a number line.

$$\frac{1x}{8} + \frac{1}{6} \geq \frac{5}{12}$$

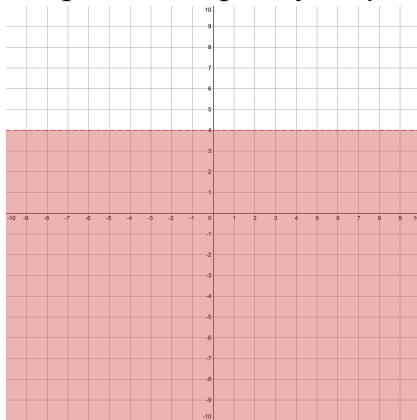
$$\frac{1x}{8} \geq \frac{5}{12} - \frac{1}{6}$$

$$\frac{1x}{8} \geq \frac{1}{4}$$

$$x \geq \frac{1(8)}{4}$$

$$x \geq 2$$

- 6) Graph the inequality $-4y + 3 > -13$



- 7) Graph the inequality $3x - 9 \geq -12$

