Daily Math
Week 13 (2013-2014)

Monday, November 11, 2013 1st

Solve:

$$x + 5 < 12$$

Monday, November 11, 2013 1st

Solve:

$$x + 5 < 12$$

Answer:

$$x + 5 < 12$$

$$x + 5 - 5 < 12 - 5$$

$$\boldsymbol{x < 7}$$

Monday, November 11, 2013 2nd

Solve:

$$2x - 5 \geq 17$$

Monday, November 11, 2013 2nd

Solve:

$$2x - 5 \geq 17$$

Answer:

$$2x - 5 \geq 17$$

$$2x - 5 + 5 \geq 17 + 5$$

$$2x \geq 22$$

$$2x \div 2 \geq 22 \div 2$$

$$\boldsymbol{x \geq 11}$$

Monday, November 11, 2013 3rd

Solve:

$$-3x \leq -12$$

Monday, November 11, 2013 3rd

Solve:

$$-3x \leq -12$$

Answer: $-3x \leq -12$

$$-3x \div (-3) \geq -12 \div (-3)$$

(note that the inequality sign reversed because of the division by a negative number)

$$\boldsymbol{x \geq 4}$$

Monday, November 11, 2013 4^{th}

Solve:

$$x + 5 > 11 - x$$

Monday, November 11, 2013 4^{th}

Solve:

$$x + 5 > 11 - x$$

Answer:

$$x + 5 > 11 - x$$

$$x + x + 5 > 11 - x + x$$

$$2x + 5 > 11$$

$$2x + 5 - 5 > 11 - 5$$

$$2x > 6$$

$$2x \div 2 > 6 \div 2$$

$$\boldsymbol{x > 3}$$

Monday, November 11, 2013 5^{th}

Solve:

$$3(x-2) \leq 24$$

Monday, November 11, 2013 5^{th}

Solve:

$$3(x-2) \leq 24$$

Answer: $3(x-2) \leq 24$

$$3(x-2) \div 3 \leq 24 \div 3$$

$$x-2 \leq 8$$

$$x-2+2 \leq 8+2$$

$$\boldsymbol{x \leq 10}$$

Monday, November 11, 2013 6^{th}

Solve:

$$4(x+1) < -5(x-2)$$

Monday, November 11, 2013 6^{th}

Solve: $4(x+1) < -5(x-2)$

Answer: $4(x+1) < -5(x-2)$

$4x + 4 < -5x + 10$

$4x + 5x + 4 < -5x + 5x + 10$

$9x + 4 < 10$

$9x + 4 - 4 < 10 - 4$

$9x < 6$

$9x \div 9 < 6 \div 9$

$$\boldsymbol{x < \frac{2}{3}}$$

Monday, November 11, 2013 7^{th}

Solve:

$$-5x + 3 > 18$$

Monday, November 11, 2013 7th

Solve: $-5x + 3 > 18$

Answer:

$$-5x + 3 > 18$$

$$-5x + 3 - 3 > 18 - 3$$

$$-5x > 15$$

$$-5x \div (-5) < 15 \div (-5)$$

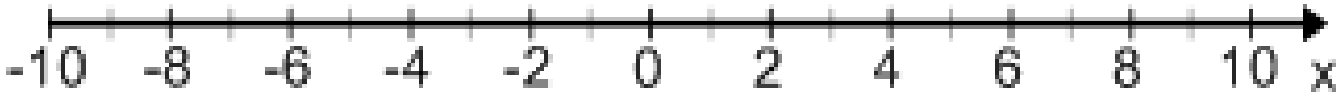
(note that the inequality sign reversed because of the division by a negative number)

$$\boldsymbol{x < -3}$$

Tuesday, November 12, 2013 1st

Graph:

$$x < 7$$



Tuesday, November 12, 2013 1st

Graph:

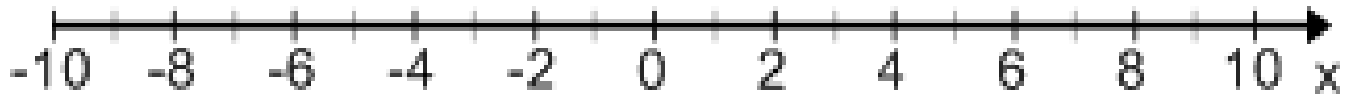
$$x < 7$$

Answer:

Tuesday, November 12, 2013 2^{nd}

Graph:

$$x \geq -4$$

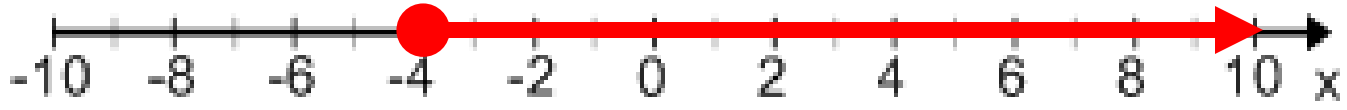


Tuesday, November 12, 2013 2^{nd}

Graph:

$$x \geq -4$$

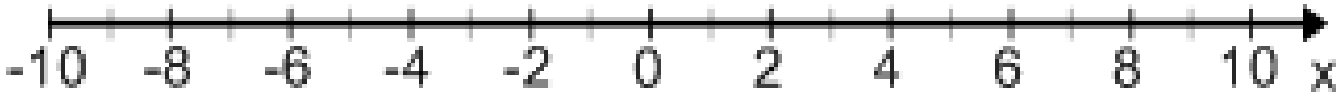
Answer:



Tuesday, November 12, 2013 3rd

Graph:

$$x > 4$$

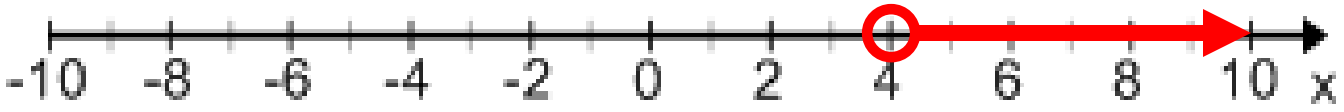


Tuesday, November 12, 2013 3rd

Graph:

$$x > 4$$

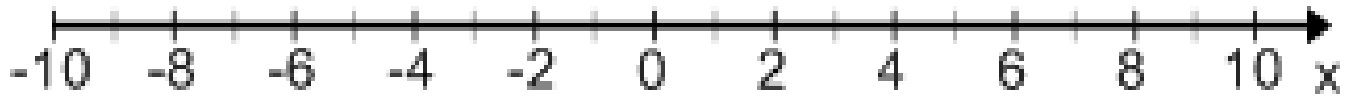
Answer:



Tuesday, November 12, 2013 4^{th}

Graph:

$$x < -3$$

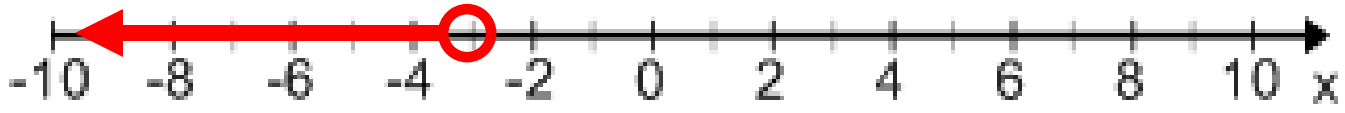


Tuesday, November 12, 2013 4^{th}

Graph:

$$x < -3$$

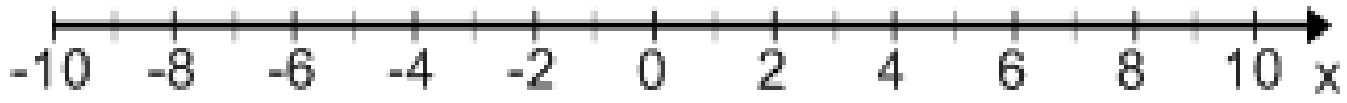
Answer:



Tuesday, November 12, 2013 5th

Graph:

$$-3 < x \leq 7$$

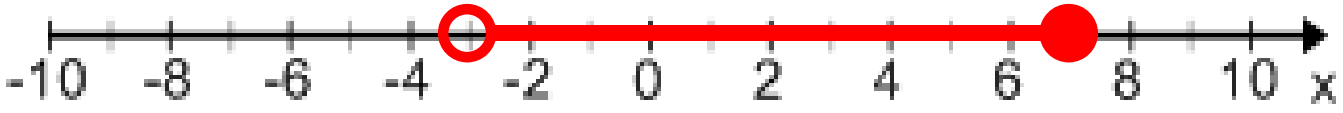


Tuesday, November 12, 2013 5^{th}

Graph:

$$-3 < x \leq 7$$

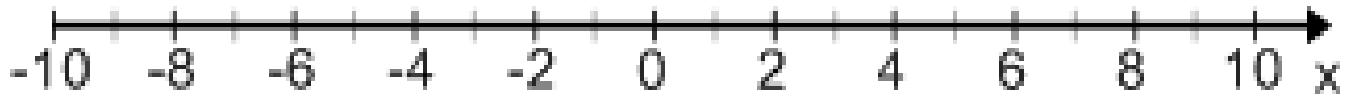
Answer:



Tuesday, November 12, 2013 6^{th}

Graph:

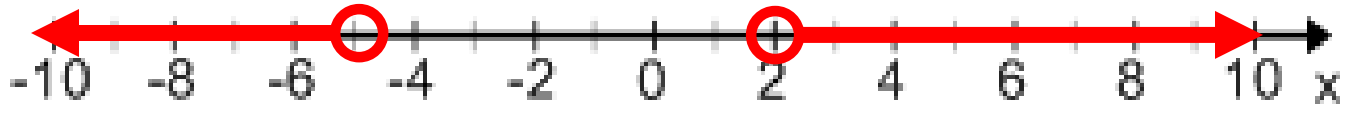
$$x < -5 \; or \; x > 2$$



Tuesday, November 12, 2013 6^{th}

Graph:

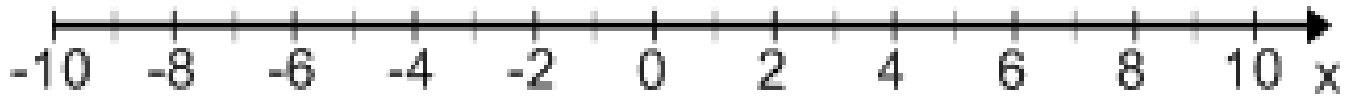
$$x < -5 \; or \; x > 2$$



Tuesday, November 12, 2013 7th

Graph:

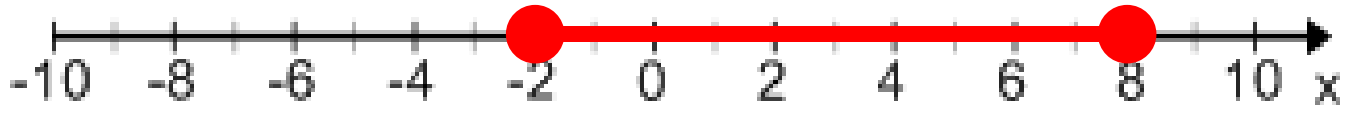
$$x \geq -2 \; and \; x \leq 8$$



Tuesday, November 12, 2013 7th

Graph:

$$x \geq -2 \; and \; x \leq 8$$



Wednesday, Nov. 13, 2013 1st

Solve for *y*:

$$3x + 4y \leq 12$$

Wednesday, Nov. 13, 2013 1st

Solve for *y*: $3x + 4y \leq 12$

Answer:

$$3x + 4y \leq 12$$

$$3x - 3x + 4y \leq 12 - 3x$$

$$4y \leq 12 - 3x$$

$$\frac{4y}{4} \leq \frac{12}{4} - \frac{3}{4}x$$

$$\boldsymbol{y \leq 3 - \frac{3}{4}x}$$

Wednesday, Nov. 13, 2013 2nd

Solve for *y*:

$$2x - 7y \leq -14$$

Wednesday, Nov. 13, 2013 2nd

Solve for *y*: $2x - 7y \leq -14$

Answer:

$$2x - 7y \leq -14$$

$$2x - 2x - 7y \leq -14 - 2x$$

$$-7y \leq -14 - 2x$$

$$\frac{-7y}{-7} \geq \frac{-14}{-7} + \frac{-2}{-7}x$$

(note that the inequality sign reversed because of the division by a negative number)

$$\boldsymbol{y \geq 2 + \frac{2}{7}x}$$

Wednesday, Nov. 13, 2013 3rd

Solve for *y*:

$$3x - 8y > 24$$

Wednesday, Nov. 13, 2013 3rd

Solve for *y*: $3x - 8y > 24$

Answer:

$$3x - 8y > 24$$

$$3x - 3x - 8y > 24 - 3x$$

$$-8y > 24 - 3x$$

$$\frac{-8y}{-8} < \frac{24}{-8} + \frac{-3}{-8}x$$

(note that the inequality sign reversed because of the division by a negative number)

$$\boldsymbol{y < -3 + \frac{3}{8}x}$$

Wednesday, Nov. 13, 2013 4th

Solve for *y*:

$$-2x + 4y < 8$$

Wednesday, Nov. 13, 2013 4th

Solve for *y*: $-2x + 4y < 8$

Answer:

$$-2x + 4y < 8$$

$$-2x + 2x + 4y < 8 + 2x$$

$$4y < 8 + 2x$$

$$\frac{4y}{4} < \frac{8}{4} + \frac{2}{4}x$$

$$\boldsymbol{y < 2 + \frac{1}{2}x}$$

Wednesday, Nov. 13, 2013 5th

Solve for *y*:

$$3(x + y) \geq 30$$

Wednesday, Nov. 13, 2013 5th

Solve for *y*: $3(x+y) \geq 30$

Answer:

$$3(x+y) \geq 30$$

$$3(x+y) \div 3 \geq 30 \div 3$$

$$x+y \geq 10$$

$$x - x + y \geq 10 - x$$

$$\boldsymbol{y \geq 10 - x}$$

Wednesday, Nov. 13, 2013 6^{th}

Solve for *y*:

$$-4(x + 2y) \leq 12$$

Wednesday, Nov. 13, 2013 6^{th}

Solve for *y*: $-4(x+2y) \leq 12$

Answer: $-4(x+2y) \leq 12$

$$-4(x+2y) \div (-4) \geq 12 \div (-4)$$

(note that the inequality sign reversed because of the division by a negative number)

$$x+2y \geq -3$$

$$x - x + 2y \geq -3 - x$$

$$2y \geq -3 - x$$

$$\frac{2}{2}y \geq \frac{-3}{2} - \frac{1}{2}x$$

$$\boldsymbol{y \geq -\frac{3}{2} - \frac{1}{2}x}$$

Wednesday, Nov. 13, 2013 7th

Solve for *y*:

$$-4y \leq -3x + 16$$

Wednesday, Nov. 13, 2013 7th

Solve for *y*: $-4y \leq -3x + 16$

Answer: $-4y \leq -3x + 16$

$$\frac{-4}{-4}y \geq \frac{-3}{-4}x + \frac{16}{-4}$$

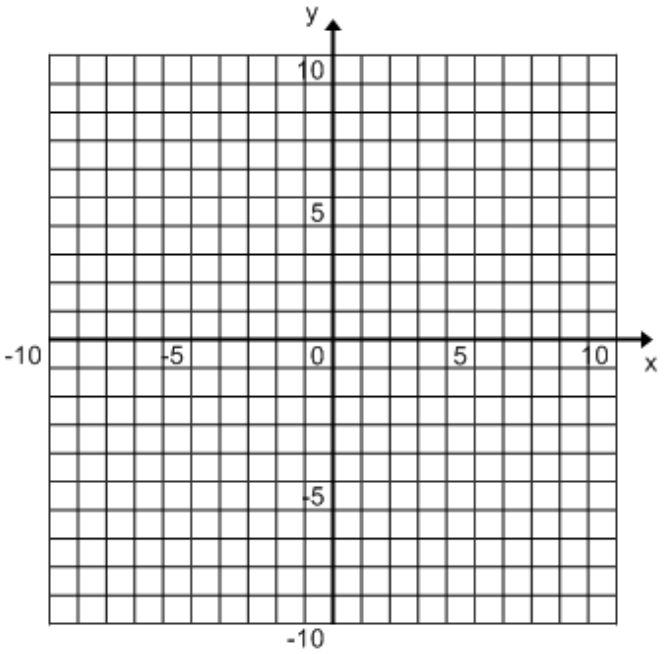
(note that the inequality sign reversed because of the division by a negative number)

$$\boldsymbol{y \geq \frac{3}{4}x - 4}$$

Thursday, November 14, 2013 1st

Graph:

$$y = \frac{1}{2}x - 1$$

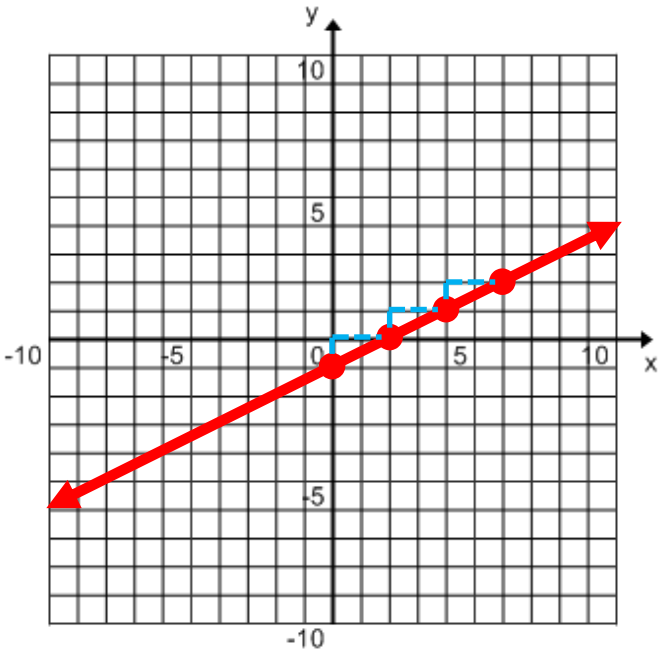


Thursday, November 14, 2013 1st

Graph:

$$y = \frac{1}{2}x - 1$$

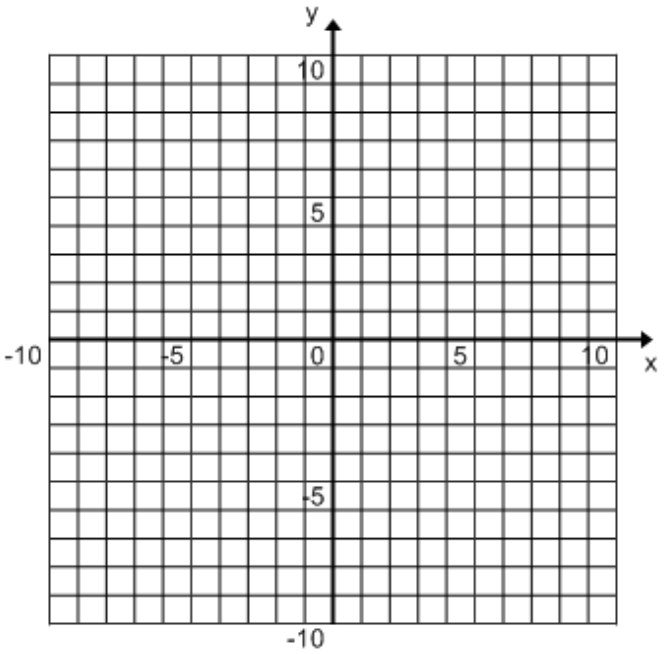
Answer:



Thursday, November 14, 2013 2nd

Graph:

$$y = 3x - 6$$

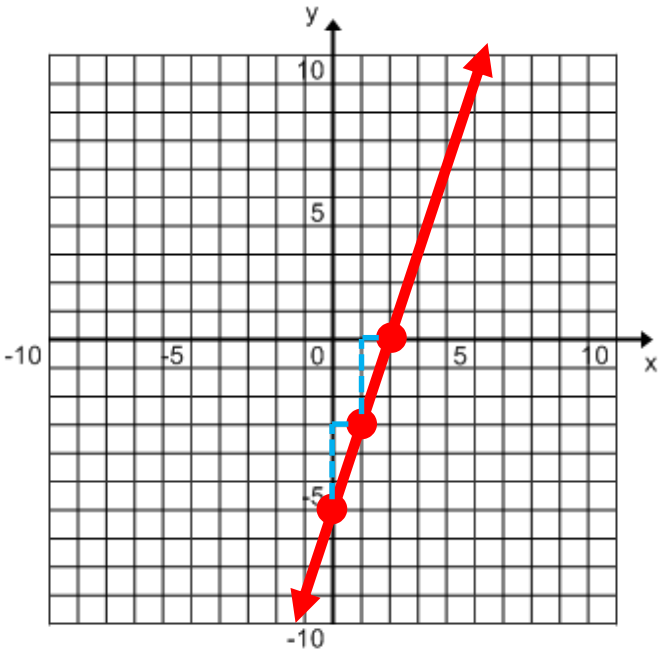


Thursday, November 14, 2013 2nd

Graph:

$$y = 3x - 6$$

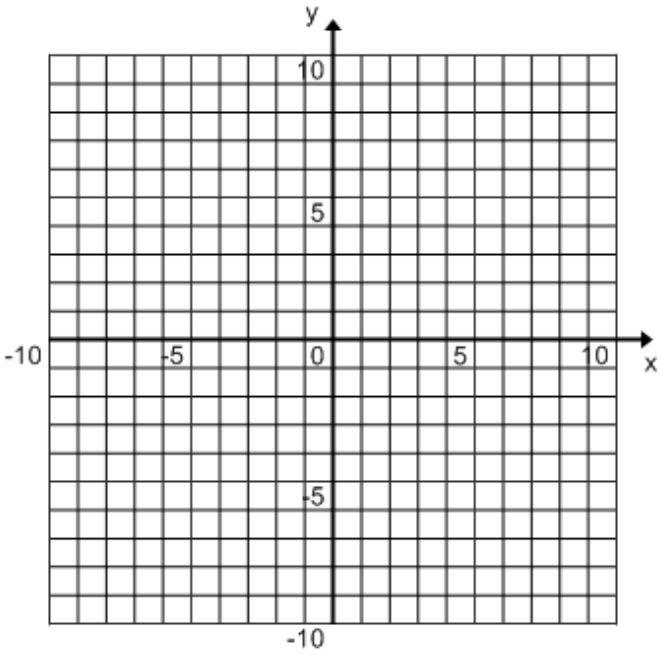
Answer:



Thursday, November 14, 2013 3rd

Graph:

$$y = \frac{3}{5}x + 1$$

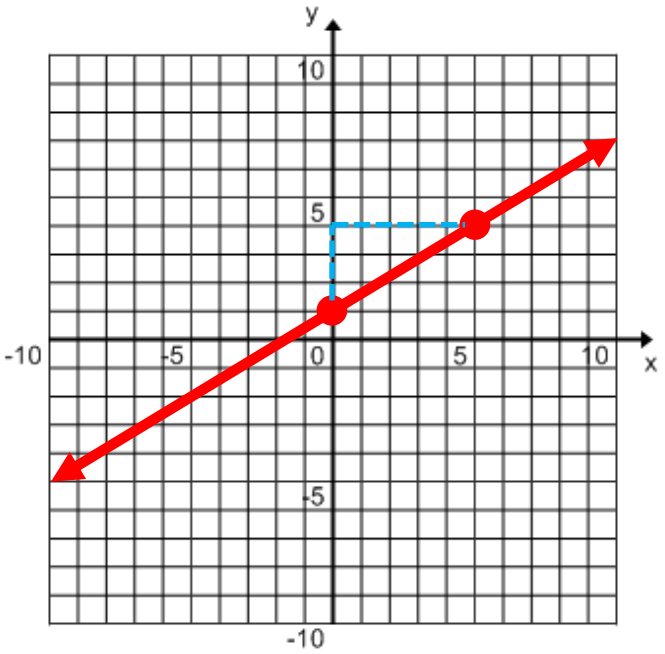


Thursday, November 14, 2013 3rd

Graph:

$$y = \frac{3}{5}x + 1$$

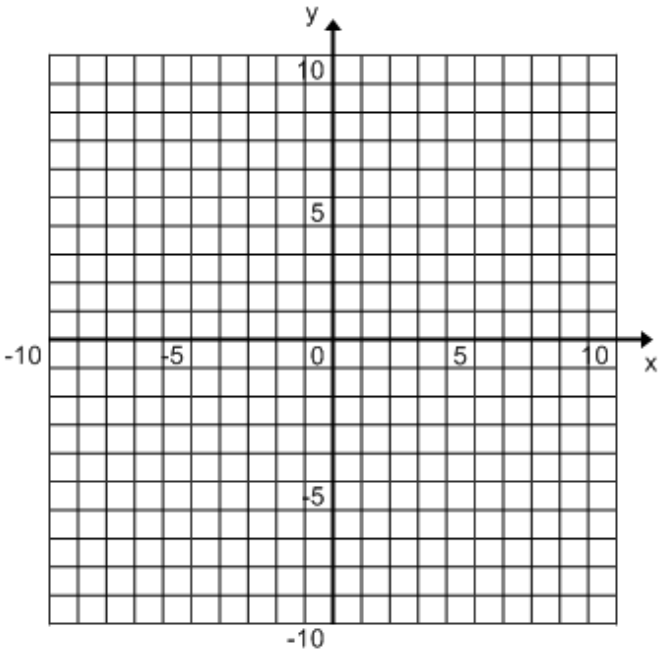
Answer:



Thursday, November 14, 2013 4th

Graph:

$$y = \frac{5}{2}x - 6$$

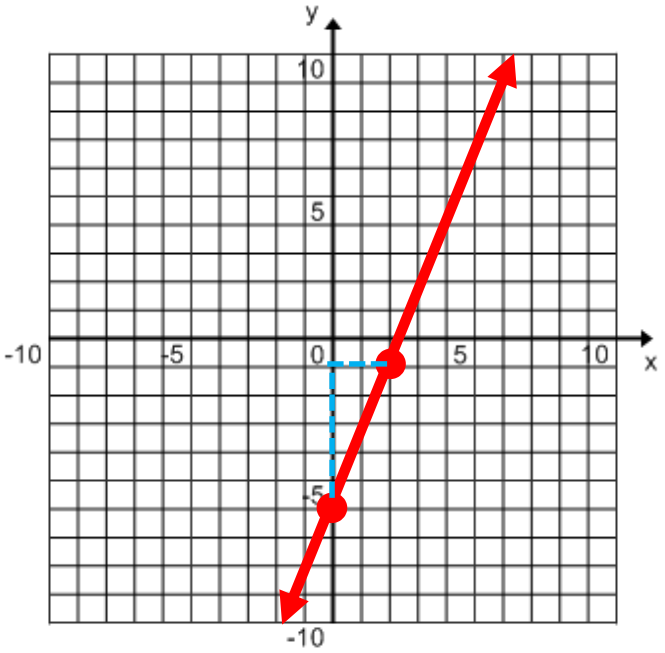


Thursday, November 14, 2013 4th

Graph:

$$y = \frac{5}{2}x - 6$$

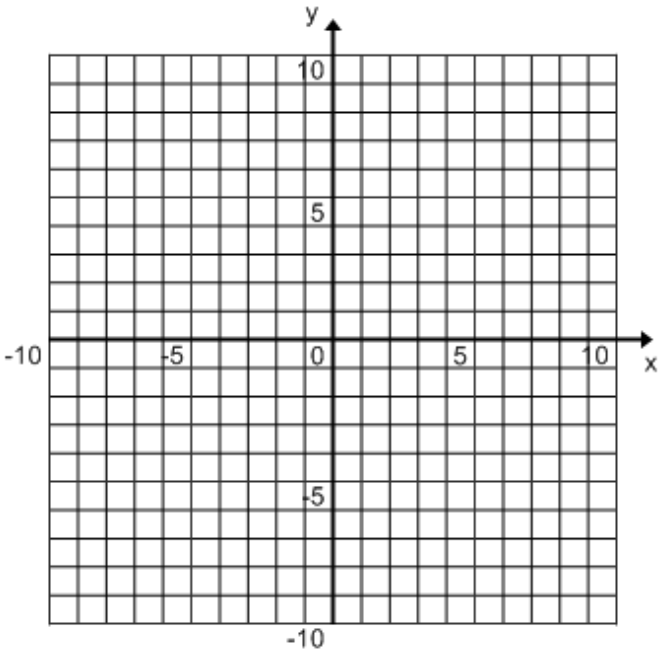
Answer:



Thursday, November 14, 2013 5th

Graph:

$$y = -\frac{3}{4}x + 7$$

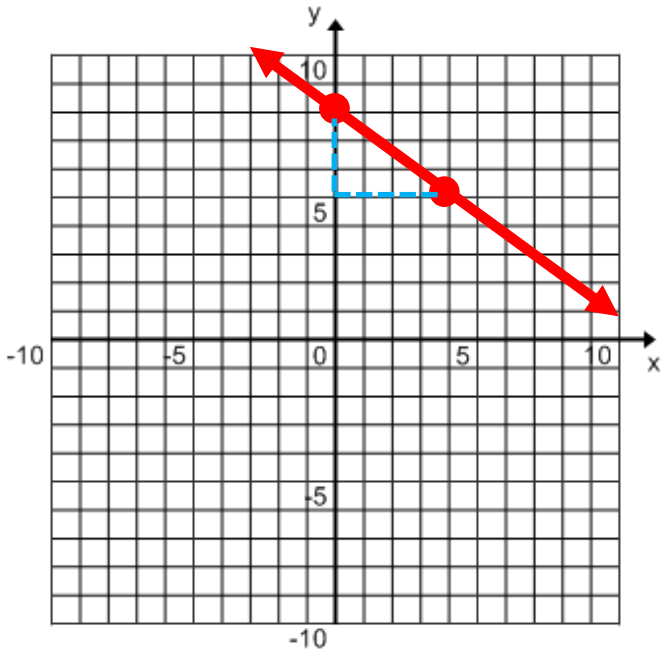


Thursday, November 14, 2013 5th

Graph:

$$y = -\frac{3}{4}x + 7$$

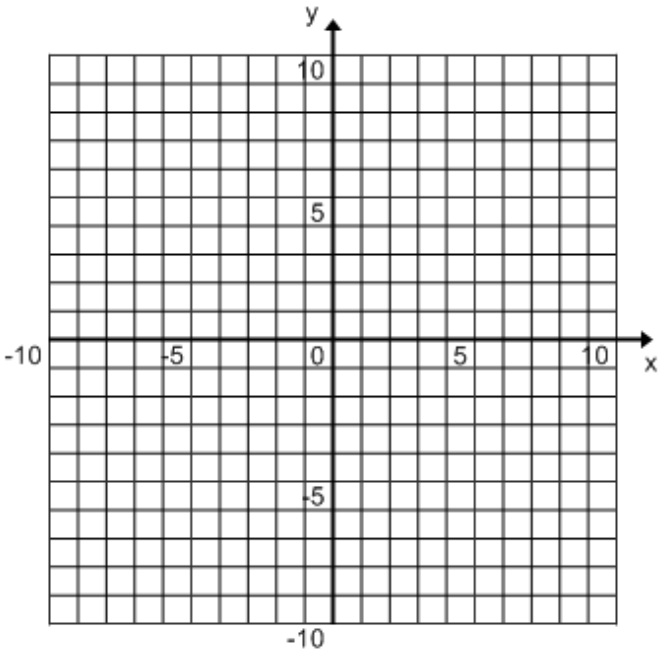
Answer:



Thursday, November 14, 2013 6th

Graph:

$$2y = -3x + 4$$



Thursday, November 14, 2013 6th

Graph:

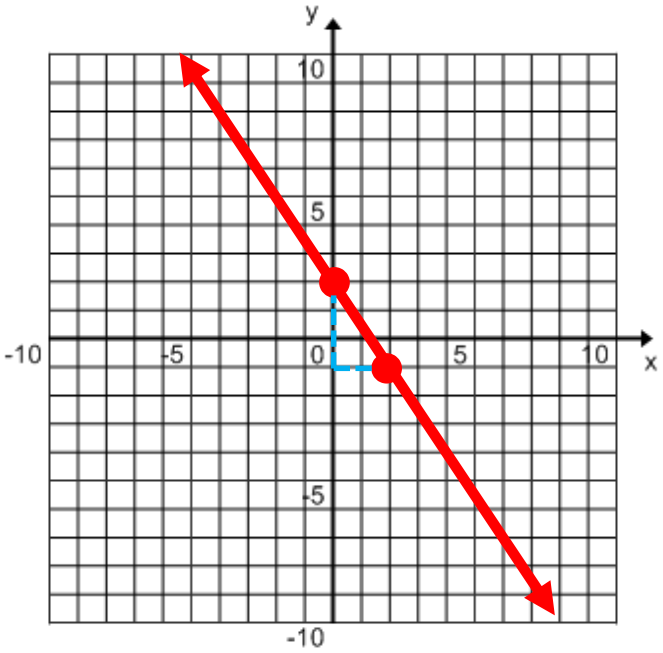
$$2y = -3x + 4$$

Answer:

$$2y = -3x + 4$$

$$\frac{2}{2}y = \frac{-3}{2}x + \frac{4}{2}$$

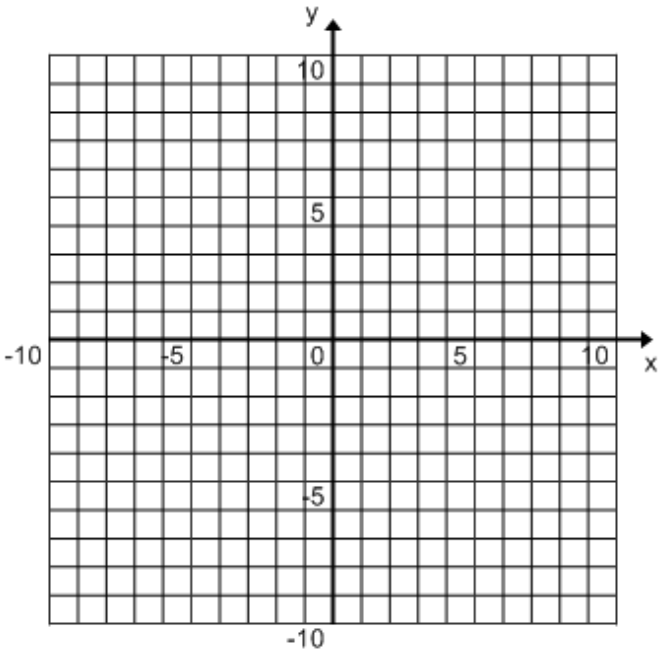
$$y = \frac{-3}{2}x + 2$$



Thursday, November 14, 2013 7th

Graph:

$$-3y = x - 6$$



Thursday, November 14, 2013 7th

Graph:

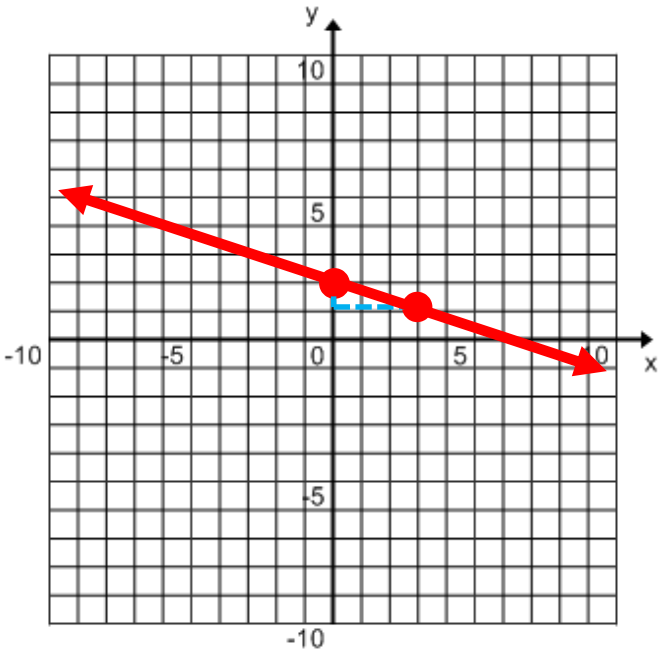
$$-3y = x - 6$$

Answer:

$$-3y = x - 6$$

$$\frac{-3}{-3}y = \frac{1}{-3}x - \frac{6}{-3}$$

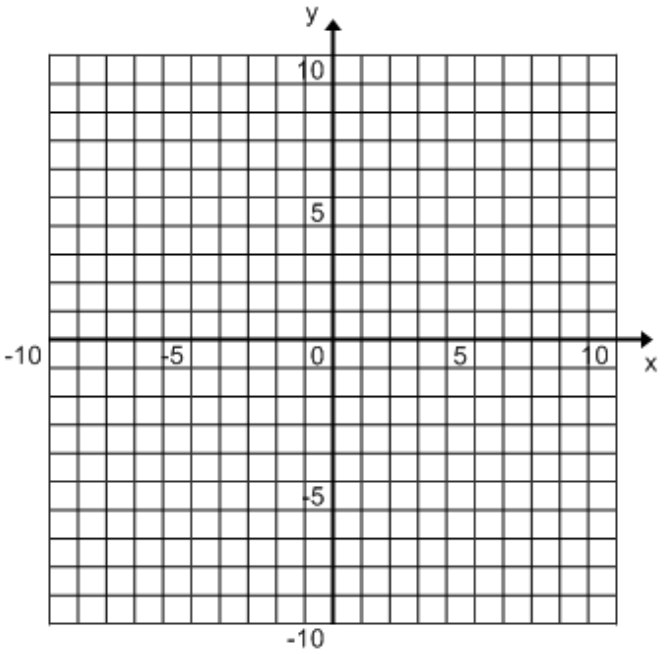
$$y = -\frac{1}{3}x + 2$$



Friday, November 15, 2013 1st

Graph:

$$y \leq \frac{1}{2}x - 1$$

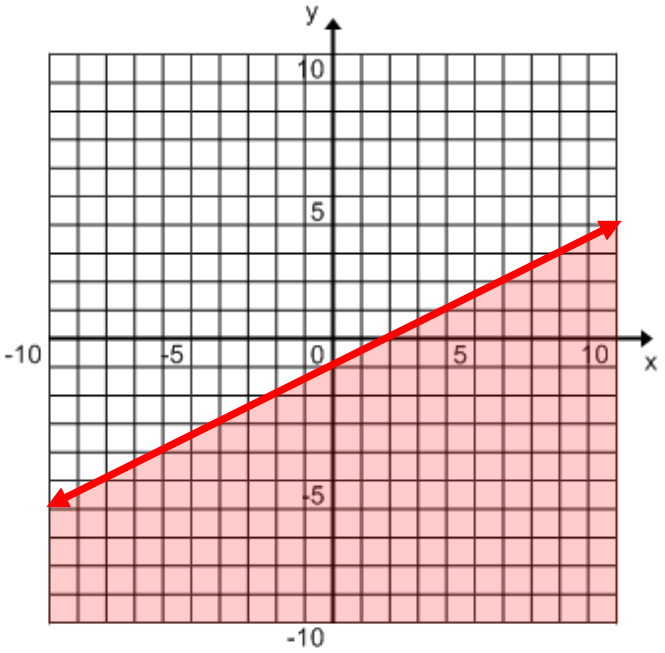


Friday, November 15, 2013 1st

Graph:

$$y \leq \frac{1}{2}x - 1$$

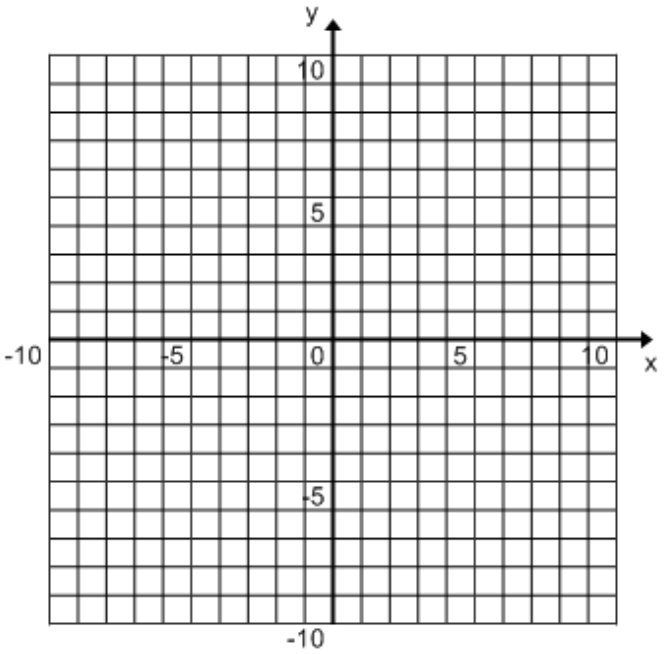
Answer:



Friday, November 15, 2013 2nd

Graph:

$$y > 3x - 6$$

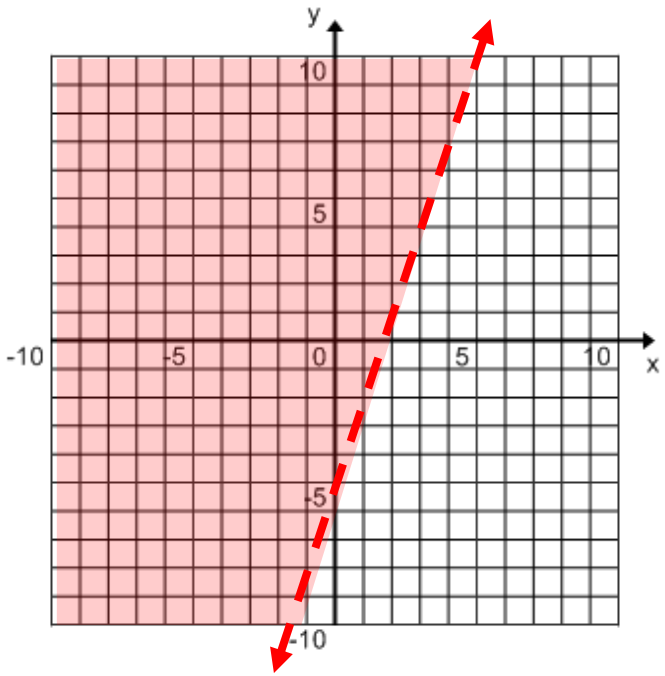


Friday, November 15, 2013 2nd

Graph:

$$y > 3x - 6$$

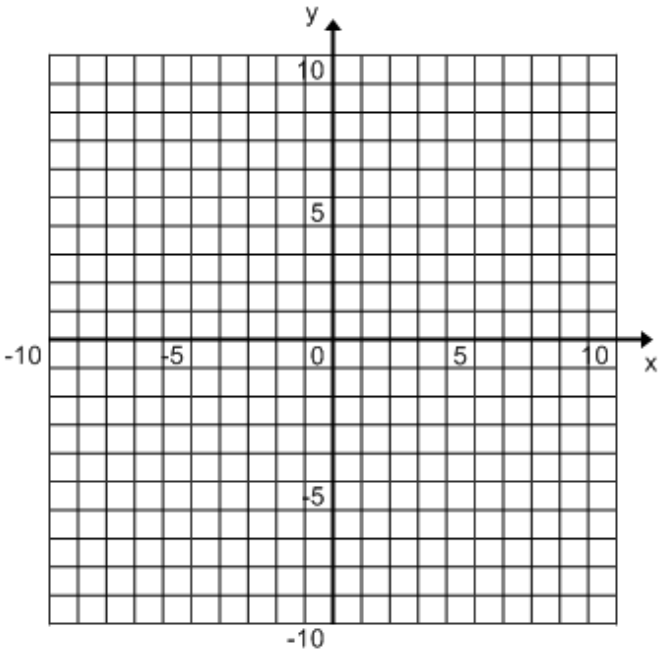
Answer:



Friday, November 15, 2013 3rd

Graph:

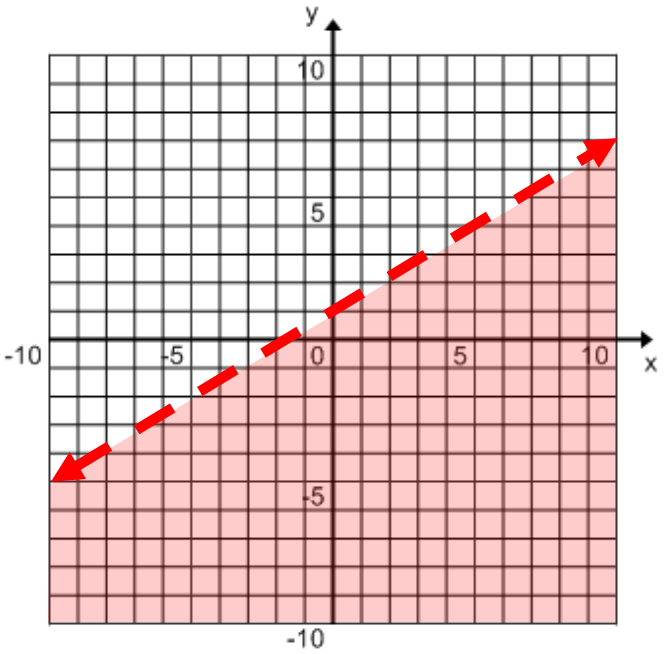
$$y < \frac{3}{5}x + 1$$



Friday, November 15, 2013 3rd

Graph:

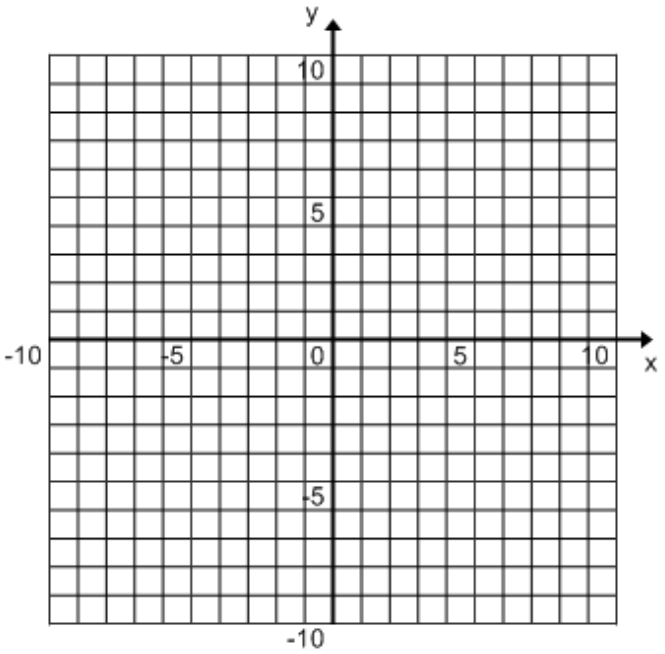
$$y < \frac{3}{5}x + 1$$



Friday, November 15, 2013 4th

Graph:

$$y \geq \frac{5}{2}x - 6$$

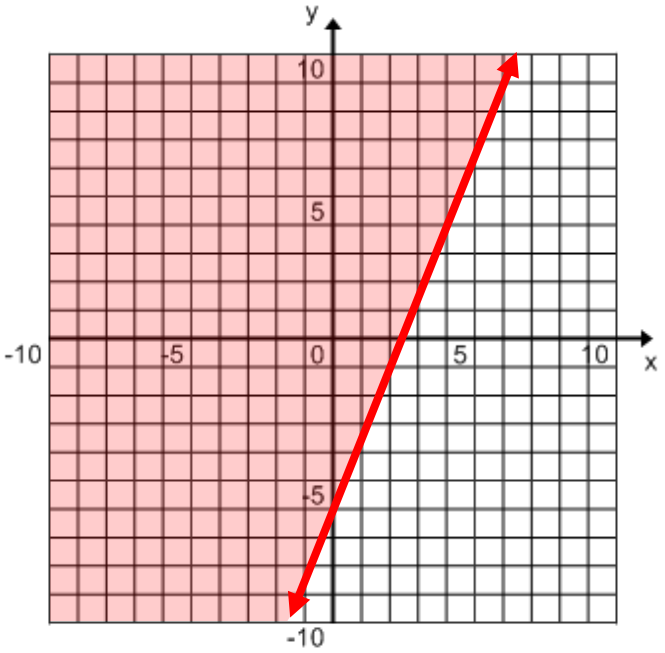


Friday, November 15, 2013 4th

Graph:

$$y \geq \frac{5}{2}x - 6$$

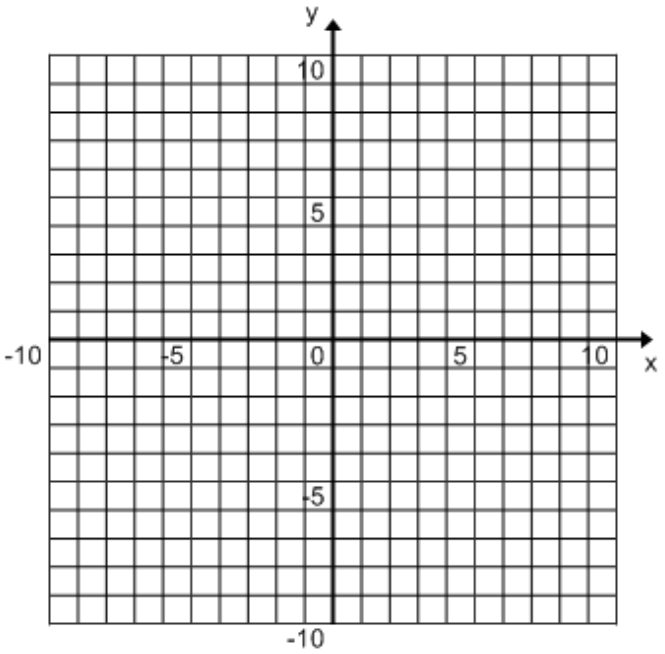
Answer:



Friday, November 15, 2013 5th

Graph:

$$y < -\frac{3}{4}x + 7$$

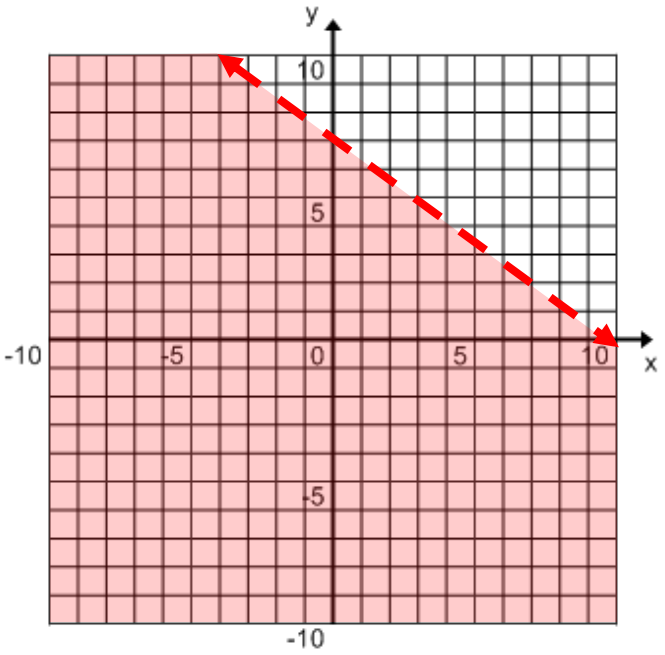


Friday, November 15, 2013 5th

Graph:

$$y < -\frac{3}{4}x + 7$$

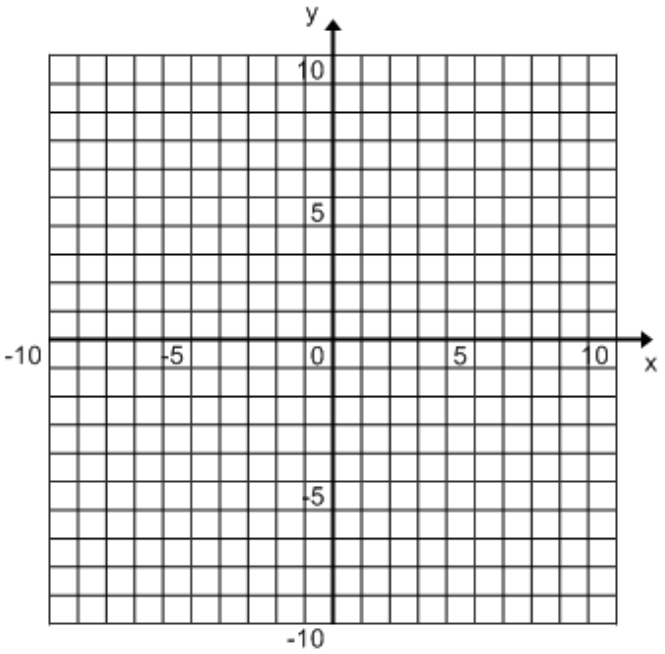
Answer:



Friday, November 15, 2013 6th

Graph:

$$y > -\frac{3}{2}x + 2$$

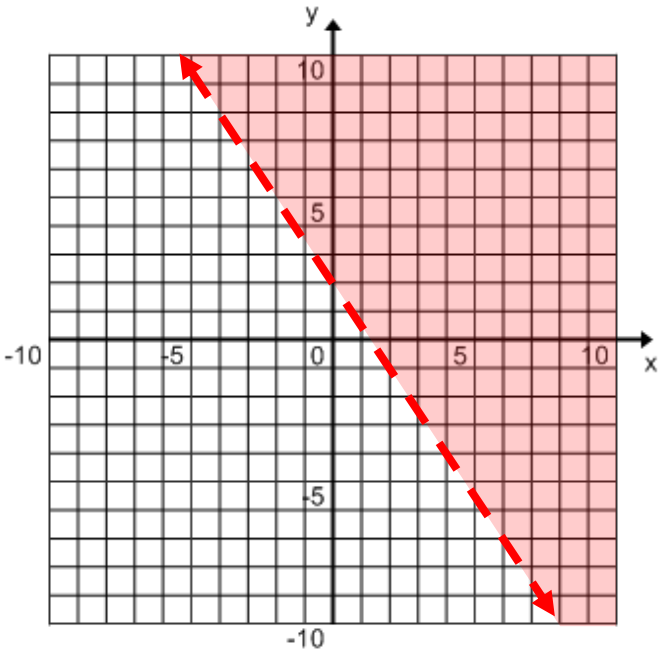


Friday, November 15, 2013 6th

Graph:

$$y > -\frac{3}{2}x + 2$$

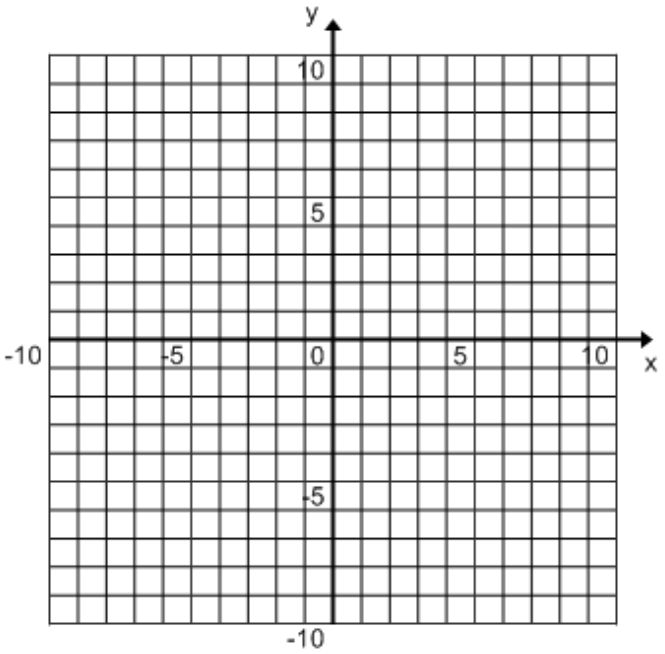
Answer:



Friday, November 15, 2013 7th

Graph:

$$y \leq -\frac{1}{3}x$$



Friday, November 15, 2013 7th

Graph:

$$y \leq -\frac{1}{3}x$$

Answer:

Hint: Use test point other than (0,0) because the borderline runs directly through the origin