Algebra 1

Name_____

HW17: Standard Form & Inequalities

Date_____ Period_____

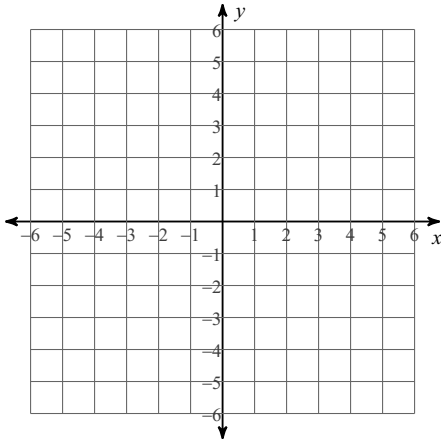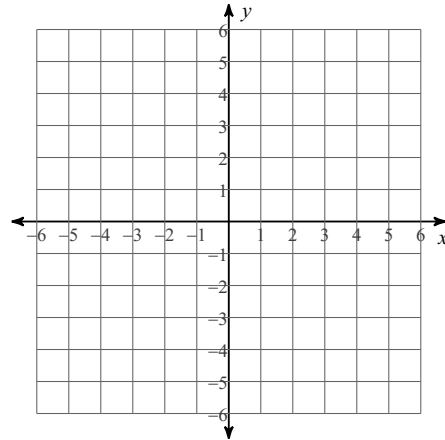**Sketch the graph of each line. You may graph the lines on this paper, but you must show your work (i.e. solving for y or finding the intercepts) on a separate piece of paper.**
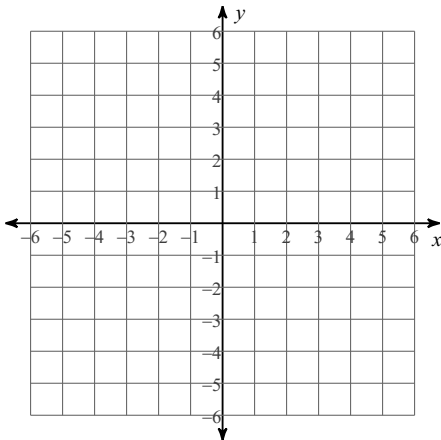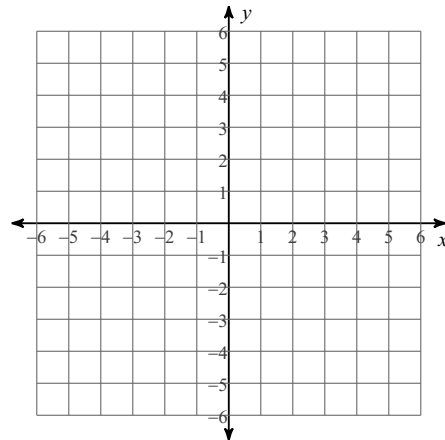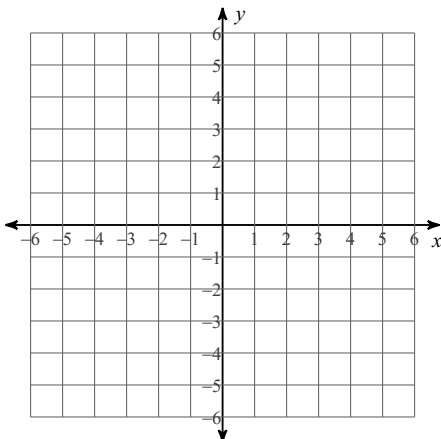
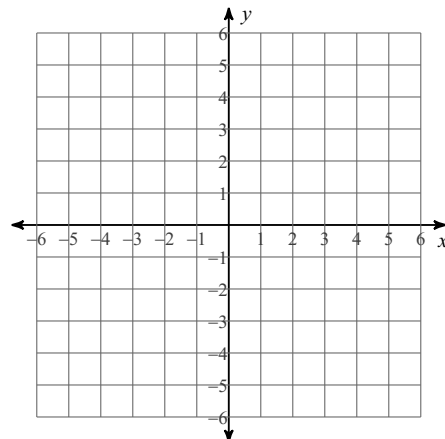1) $3x + 4y = 8$

2) $x - y = 5$

3) $x + y = -2$

4) $3x - 2y = 0$

5) $2x + y = 5$

6) $x + 2y = 4$

Daniel wants to hold a bake sale in order to buy his mom a gift. He wants to buy her a gift that costs $12. To make the money, he plans to sell cookies for $2 each and cupcakes for $3 each.

7) Define variables and write an equation that models the situation in the directions above.

8) Graph the equation from the previous question. If you used different variables, let x be the number of cookies sold and y be the number of cupcakes sold.
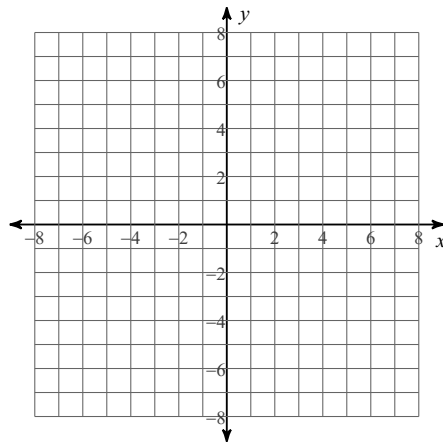
9) Can Daniel meet his goal if he sells 0 cookies and 4 cupcakes? Explain.
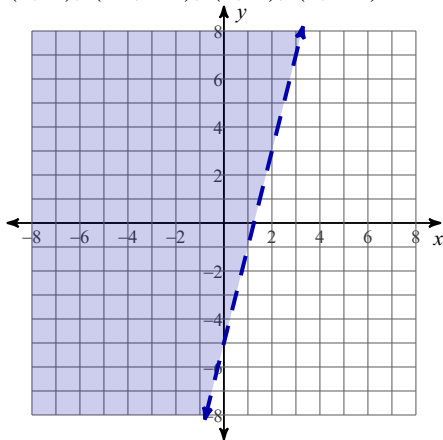
10) Can Daniel meet his goal if he sells 1.5 cookies and 3 cupcakes? Explain.

11) Can Daniel meet his goal if he sells 3 cookies and 2 cupcakes? Explain.
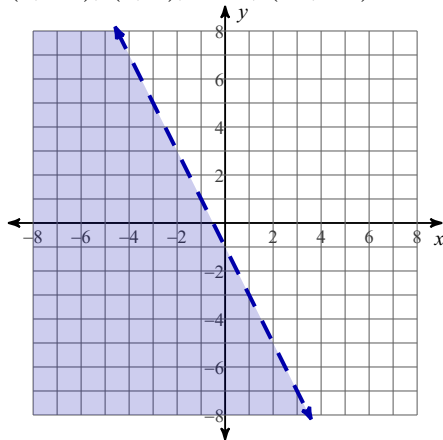
12) Can Daniel meet his goal if he sells 5 cookies and 0 cupcakes? Explain.

Use the graph to determine if the points are solutions to the inequality.
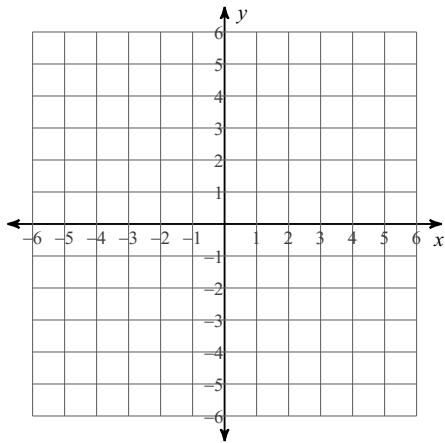
13) $(0, 3), (-2, -6), (6, 1), (2, -3)$

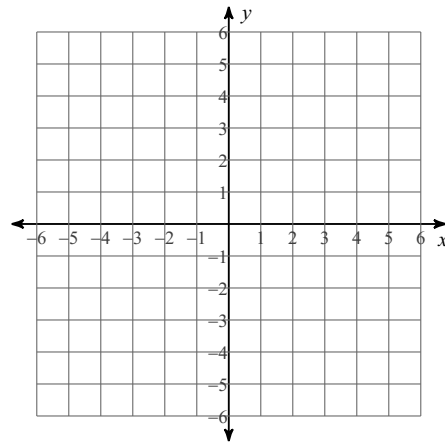14) $(0, -1), (2, 2), -2.5, (-4, -7)$
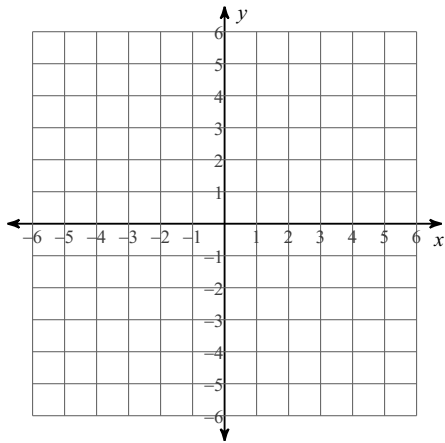
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Sketch the graph of each linear inequality.
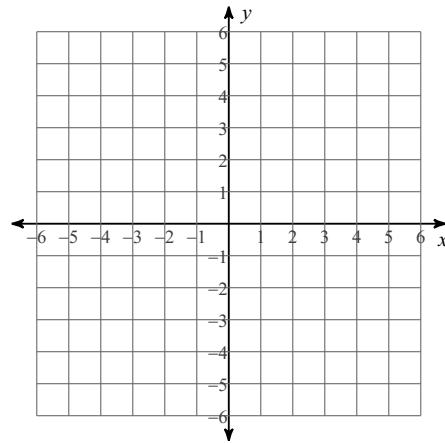
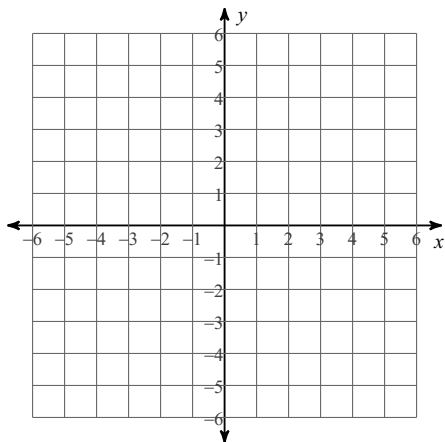15) $y > -\dfrac{1}{5}x - 1$

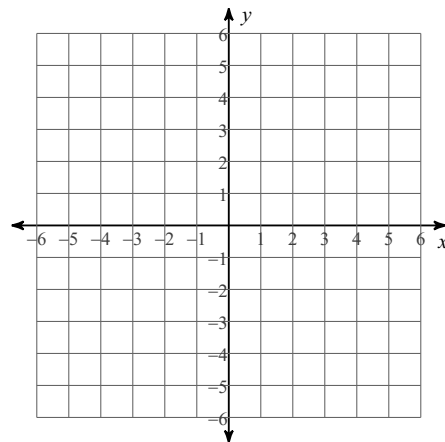16) $y < \dfrac{1}{5}x + 1$

17) $y \le -3x + 5$

18) $y \ge -1$

19) $x - y \le -5$

20) $x - 3y > -6$

Karen is going on a road trip with her family. To keep herself entertained, she is bringing books and movies. She can read a book in 4 hours and watch a movie in 2 hours.

21) Define variables and write an inequality that describes the situation. (Hint: can Karen read/watch movies for more than or less than 24 hours?)

22) Graph the inequality from the previous question. (You may want to change it into slope-intercept form first.) Let x be the number of mvoies watched and y be the number of books read.
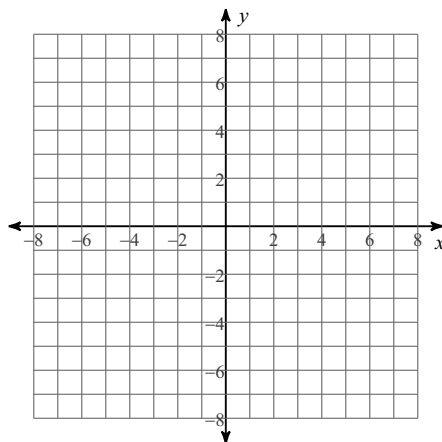
23) Can Karen watch 4 movies and read 3 books during her trip? Explain.
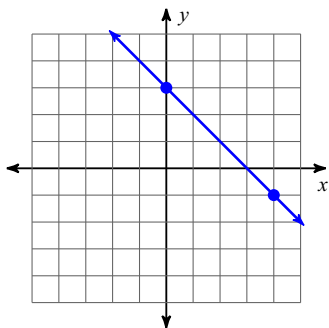
24) Can Karen watch 10 movies and read 1 book during her trip? Explain.

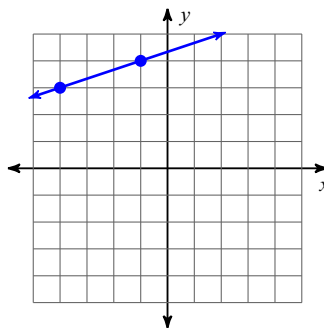25) Can Karen watch 5 movies and read 5 books during her trip? Explain.

26) Can Karen watch −3 movies and read 8 books during her trip? Explain.

Find the slope of each line.

27)

28)

On a separate piece of paper, find the slope of the line through each pair of points.

29) $(-20, 20), (-1, 12)$

30) $(14, 5), (-4, -14)$