

Name \_\_\_\_\_

Date \_\_\_\_\_ Pd. \_\_\_\_\_

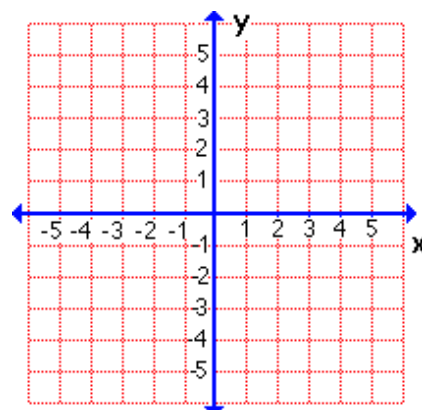
**Notes: Graphing Linear Equations**

<b>Linear Equation</b>	An equation in the form _____, whose graph is a straight line.
<b>Linear Function</b>	A function in which the $x$ and $y$ variables have the relationship _____.
<b>Non-Linear Function</b>	A function in which the $x$ and $y$ variables are <b>not</b> in the relationship _____.

**Example 1** Determine whether  $y = 6 - 3x$  is a linear equation. If so, write the equation in standard form.

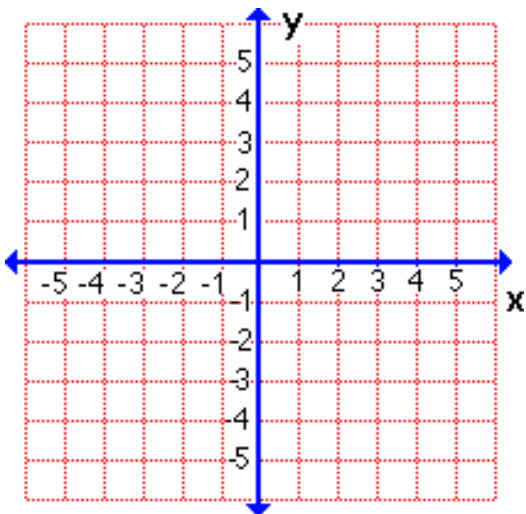
**Example 2** Determine whether  $3xy + y = 4 + 2x$  is a linear equation. If so, write the equation in standard form.

**Example** Graph the equation  $y - 2x = 1$ .

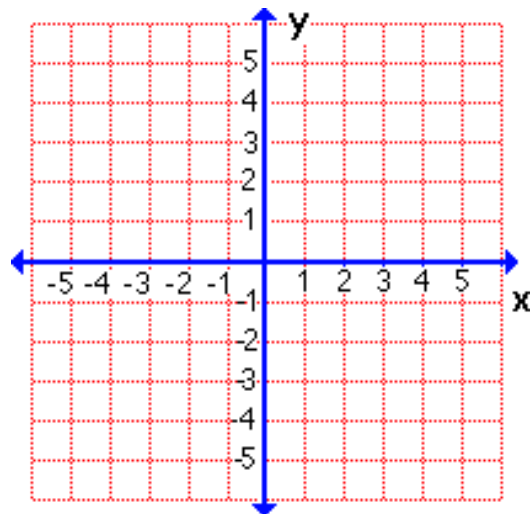


<b>x-intercept</b>	The coordinate (single number) at which a graph intersects the _____.
<b>y-intercept</b>	The coordinate (single number) at which a graph intersects the _____.

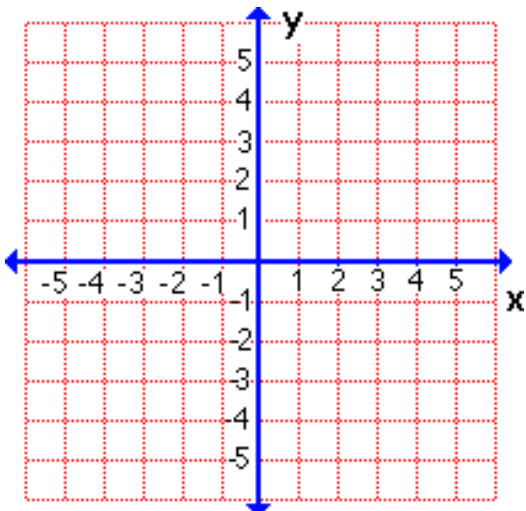
1.  $3x + 2y = 6$



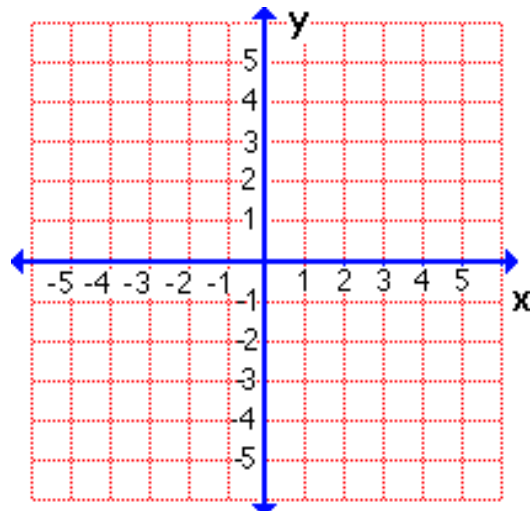
2.  $x - 2y = 4$



3.  $y = 2x - 4$



4.  $x = 3y + 6$

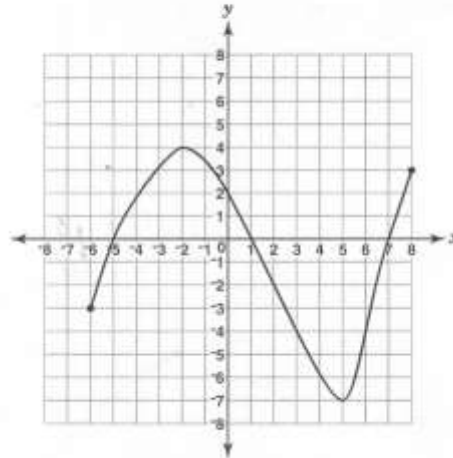


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**Exit Card: Graphing Linear Equations**

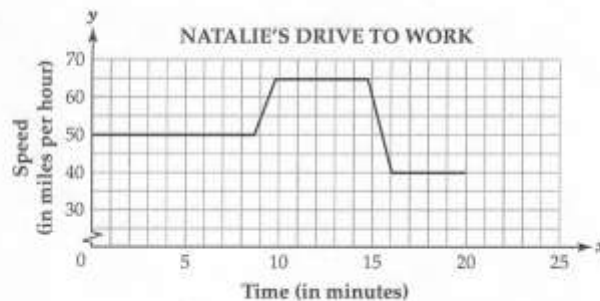
1. Look at the function that is graphed below.



What is the range of this function?

- A  $-7 \leq y \leq 4$   
 B  $-6 \leq y \leq 8$   
 C  $-5 \leq y \leq 7$   
 D  $-2 \leq y \leq 5$

2. The graph below shows Natalie's speed as she drives to work Wednesday morning.

According to the graph, what is the range of Natalie's speeds ( $y$ ) on her drive to work?

- A  $0 \leq y \leq 25$   
 B  $10 \leq y \leq 25$   
 C  $40 \leq y \leq 65$   
 D  $50 \leq y \leq 65$

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**Homework: Pages 221 – 222 (22 – 28, 46 – 51)**

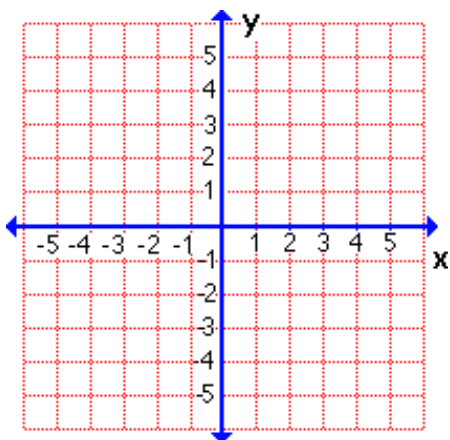
22. Is  $\frac{3}{x} + \frac{4}{y} = 2$  a linear equation?

23. Is  $\frac{x}{2} = 10 + \frac{2y}{3}$  a linear equation?

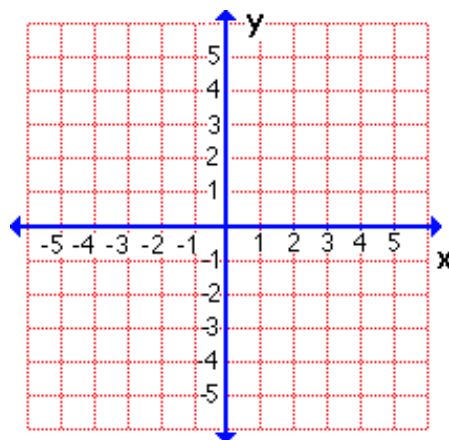
24. Is  $7n - 8m = 4 - 2m$  a linear equation?

25. Is  $3a + b - 2 = b$  a linear equation?

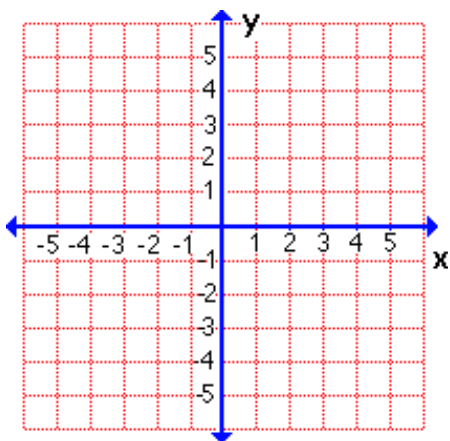
26. Graph  $y = -1$



27. Graph  $y = 2x$



28. Graph  $y = 5 - x$

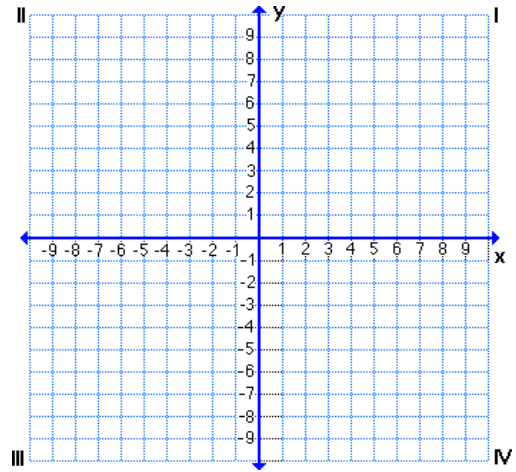
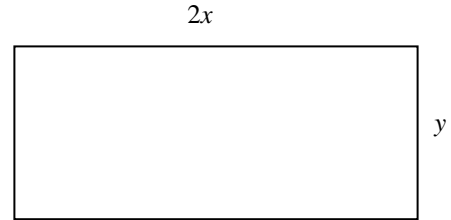


The perimeter  $P$  of a rectangle is given by  $2l + 2w = P$ , where  $l$  is the length of the rectangle and  $w$  is the width.

46. If the perimeter of the rectangle is 30 inches, write an equation for the perimeter in standard form.

47. What are the  $x$ - and  $y$ -intercepts of the graph of the equation?

48. Graph the equation.



As a thunderstorm approaches, you see lightning as it occurs, but you hear the accompanying sound of thunder a short time afterward. The distance  $d$  in miles that sound travels in  $t$  seconds is given by the equation  $d = 0.21t$ .

49. Make a table of values.

$x$	Work	$y$

50. Graph the equation.

51. Estimate how long it will take to hear the thunder from a storm 3 miles away.

