

# Unit 1 – Linear Functions and Equations

## Linear Function Graphs

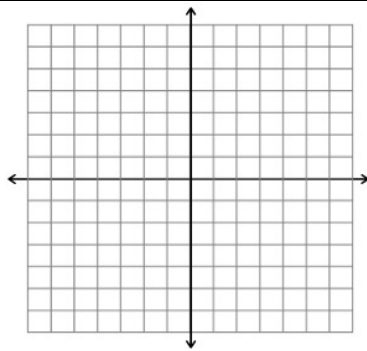
A “linear” function has a graph that is \_\_\_\_\_. It has a constant \_\_\_\_\_.

Slope Equation:

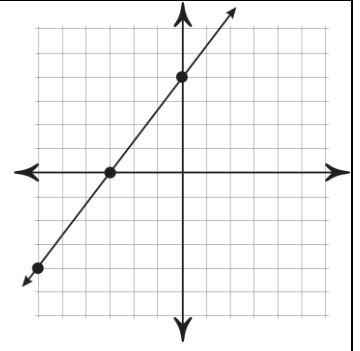
### Slope-Intercept Form

$$y = mx + b$$

Graph

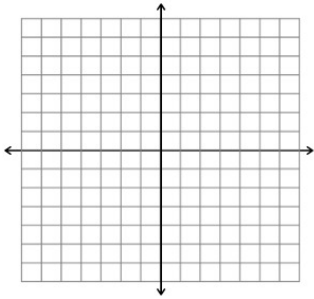


Write

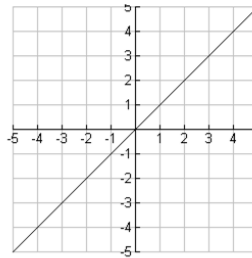


Graph special cases

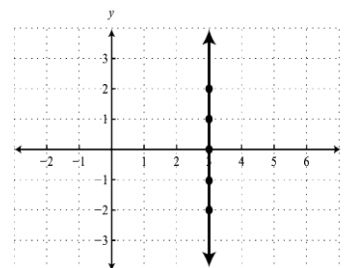
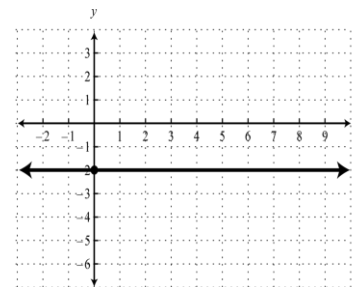
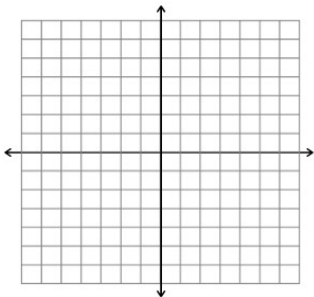
$$y = -x$$



Write special cases



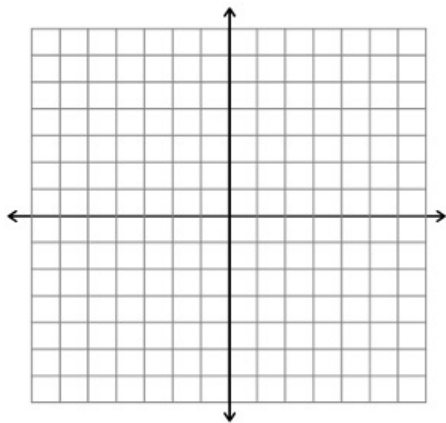
$$y = -6$$



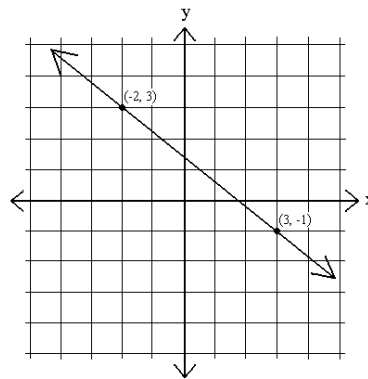
### Point-Slope Form

$$y - y_1 = m(x - x_1)$$

Graph



Write

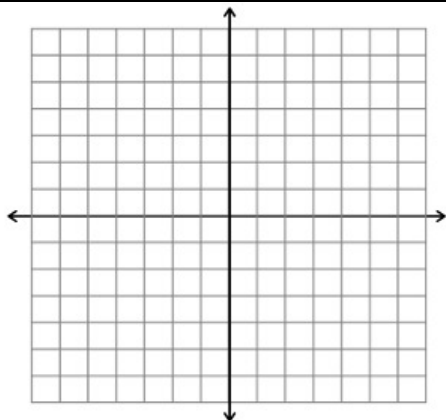


Rewrite in slope-intercept form

### Standard Form

$$Ax + By = C$$

Graph



Rewrite in slope-intercept form

## Unit 1 Linear Function Graphs Practice:

A) Find the slope of each linear function

1.

x	0	1	2	3	4
y	2	4	6	8	10

x	0	1	2	3	4
y	10	7	4	1	-2

x	2	4	6	8	10
y	4	10	16	22	28

x	2	4	6	8	10
y	25	19	13	7	1

2.  $f(x) = -5$

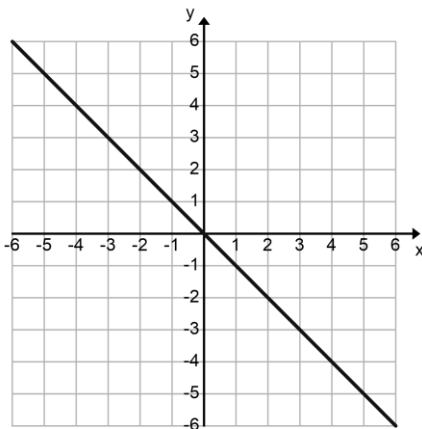
3. A line that passes through the points  
a.  $(4, -2)$  and  $(-3, 1)$

4. A line that passes through the points  
a.  $(5, -2)$  and  $(-2, -2)$

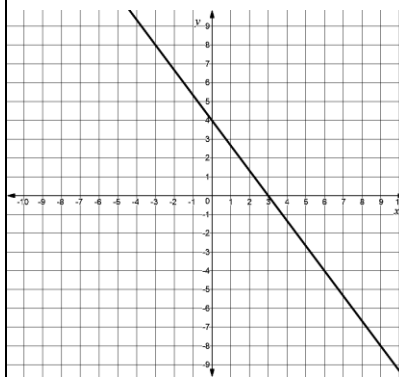
5. A line that passes through the points  
a.  $(1, 2)$  and  $(-2, -4)$

B) Write the equations:

1. Write in **slope-intercept** form



2. Write FIVE DIFFERENT VERSIONS in **point-slope** form



3. Rewrite in **slope-intercept** form:

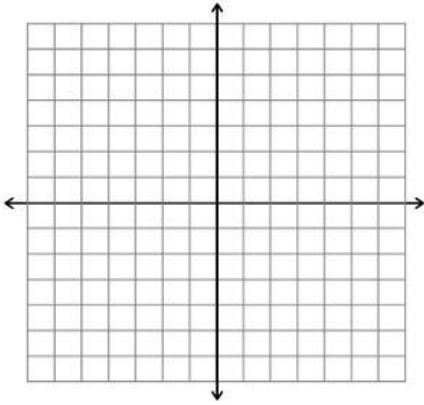
$$y - 4 = \frac{2}{3}(x + 3)$$

4. Rewrite in **slope-intercept** form:

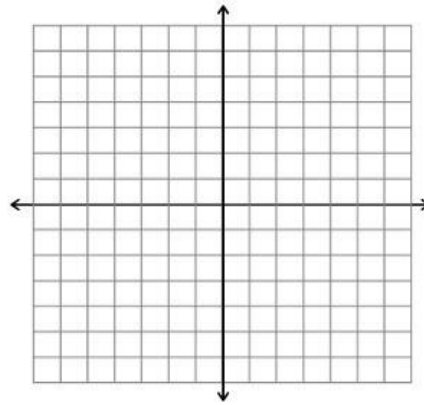
$$y - 2 = -\frac{3}{4}(x + 5)$$

C) Graph the functions:

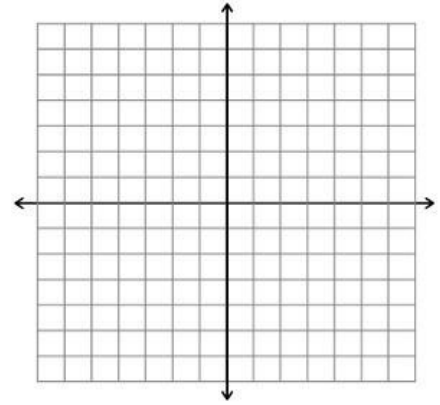
1.  $y = x - 3$



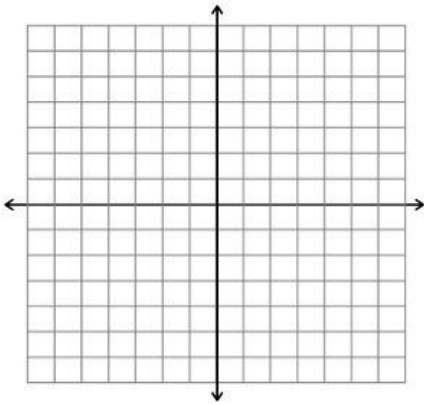
2.  $y = -\frac{2}{5}x$



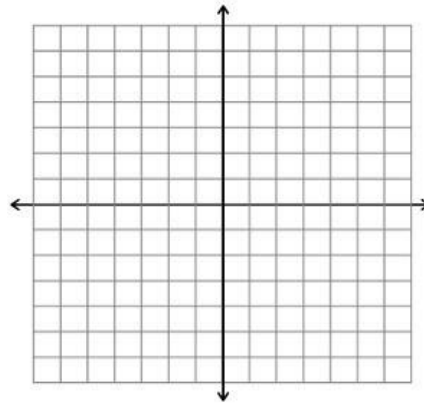
3.  $x = 4$



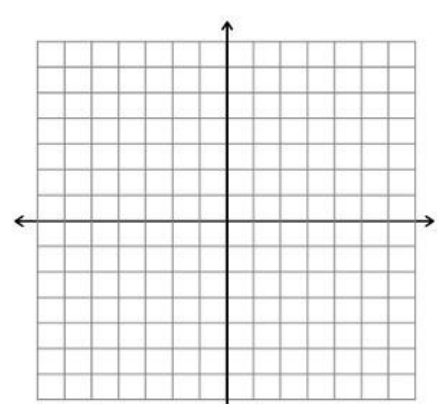
1.  $y - 5 = 2(x - 6)$



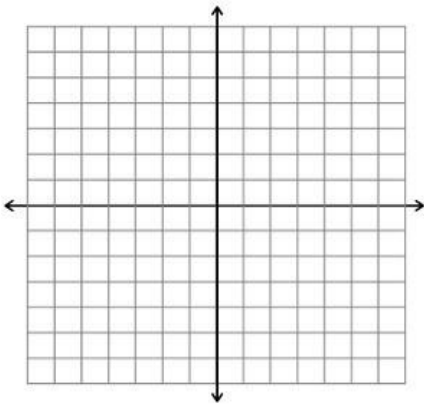
2.  $y + 3 = -(x - 4)$



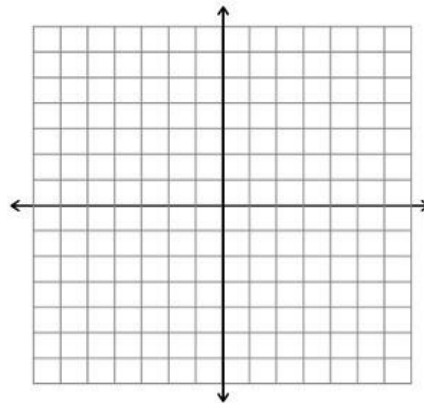
3.  $y - 2 = -\frac{3}{4}(x + 7)$



1.  $2x + 3y = 12$



2.  $-x + 3y = 6$



3.  $y = -1$

