

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Chapter 6 Review

For each type of question, the achievement level is indicated. Showing work is an important strategy in communicating your knowledge and ideas so please be thorough.

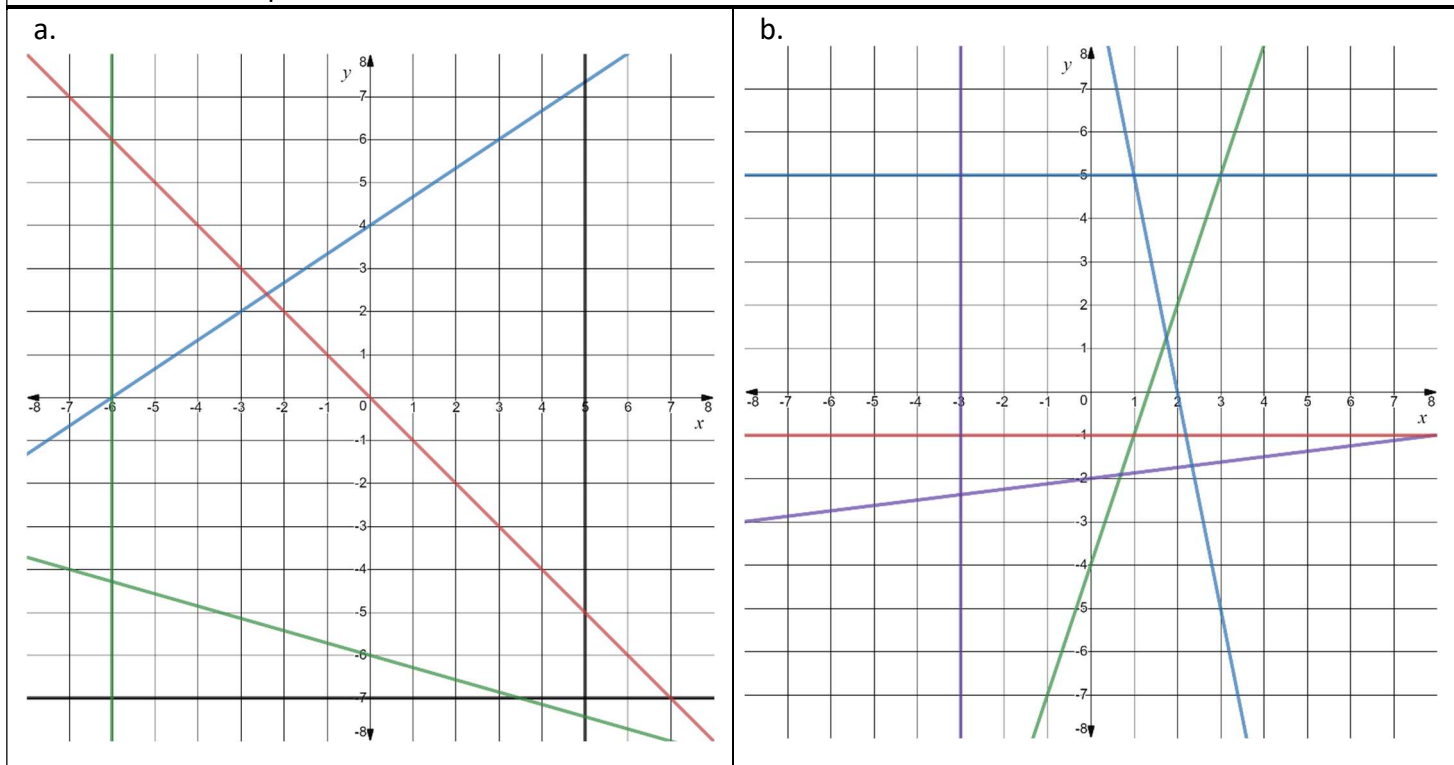
<b>Learning Goal 6.1</b>	Calculating the slope of the line and <ul style="list-style-type: none"> <li>• Using the slope to graph a line, and</li> <li>• Applying the slope to parallel and perpendicular lines.</li> </ul>
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**Developing**

1. Classify the slope of each line segment as positive, negative, zero or undefined.

**Proficient**

2. Find the slope of the lines.



**Proficient**

3. Calculate the slope through the given points.

a. $M(81, 53)$ $N(48, 36)$	b. $P(10, 13)$ $Q(-14, 53)$
c. $A(63, 76)$ $B(74, 43)$	d. $M(27, 41)$ $N(99, 32)$
e. $X(12, -34)$ $Y(47, -20)$	f. $J(-53, -19)$ $K(-47, 2)$

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**Developing**

4. Given the original slope of a line,

a. State the slope of a line that would be parallel.

b. State the slope of a line that would be perpendicular.

$\frac{1}{2}$

$-\frac{3}{5}$

$-\frac{3}{2}$

$\frac{8}{7}$

3

-8

1

0

DNE

**Proficient**

5. Find the slope of a line that is:

a. Parallel to a line through the points

$A(63, 76)$  and  $B(74, 43)$

$P(10, 13)$  and  $Q(-14, 53)$

$J(-53, -19)$  and  $K(-47, 2)$

b. Perpendicular to a line through the points

$X(12, -34)$  and  $Y(47, -20)$

$F(81, 53)$  and  $G(48, 36)$

$M(27, 41)$  and  $N(99, 32)$

**Extending**the origin and  $(15, -3)$ the origin and  $(-6, -12)$

## Chapter 6 Review

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<b>Learning Goal 6.2</b>	Constructing and using the following forms of a linear equation: <ul style="list-style-type: none"> <li>• Slope – Intercept Form <math>y = mx + b</math>,</li> <li>• Slope – Point Form <math>y - y_1 = m(x - x_1)</math>, and</li> <li>• General Form <math>Ax + By + C = 0</math>.</li> </ul>
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**Developing**

1. Write the equation slope-intercept of a line with	
a. a slope of 3 and a $y$ -intercept of 1	b. a slope of $-\frac{1}{3}$ and a $y$ -intercept of 5
c. a slope of $-\frac{5}{3}$ and a $y$ -intercept of $-4$	d. a slope of $\frac{3}{2}$ and a $y$ -intercept of $(0, -1)$
e. a slope of $\frac{2}{5}$ and a $y$ -intercept of $(0, 8)$	f. a slope of 1 and a $y$ -intercept of $(0, -7)$
2. Write the equation in slope-point of a line with	
a. a slope of 3 through the point $(2, 5)$	b. a slope of $-\frac{1}{3}$ through the point $(-9, 2)$
c. a slope of $-\frac{5}{3}$ through the point $(3, 0)$	d. a slope of $\frac{3}{2}$ through the point $(7, -1)$
e. a slope of $\frac{3}{4}$ through the point $(-10, 3)$	f. a slope of $-1$ through the point $(-1, -1)$
g. a slope of $\frac{3}{2}$ through $(6, -2)$	h. a slope of $-\frac{2}{3}$ through $(-3, 1)$
3. State the slope, $x$ – and $y$ – intercepts of the following equations.	
a. $x + 2y + 10 = 0$	b. $2x - 3y - 6 = 0$
c. $3x + 6y - 12 = 0$	d. $2x - y + 5 = 0$
e. $x + 8y - 2 = 0$	f. $5x + 7y + 11 = 0$

**Proficient**

4. Determine the equation of each of the following lines. Leave your answer in slope-point form.	
a. Line through points $M(1, -3)$ and $N(7, -21)$	b. Line through points $A(24, 8)$ and $B(4, -7)$
c. Line parallel to $y = -\frac{6x}{5} - 1$ and through $(10, 2)$	d. Line parallel to $y = -x + 2$ and through $(8, 0)$
e. Line perpendicular to $y = \frac{x}{4} + 5$ and through $(10, 2)$	f. Line perpendicular to $y = -\frac{2x}{7}$ and through $(0, 2)$

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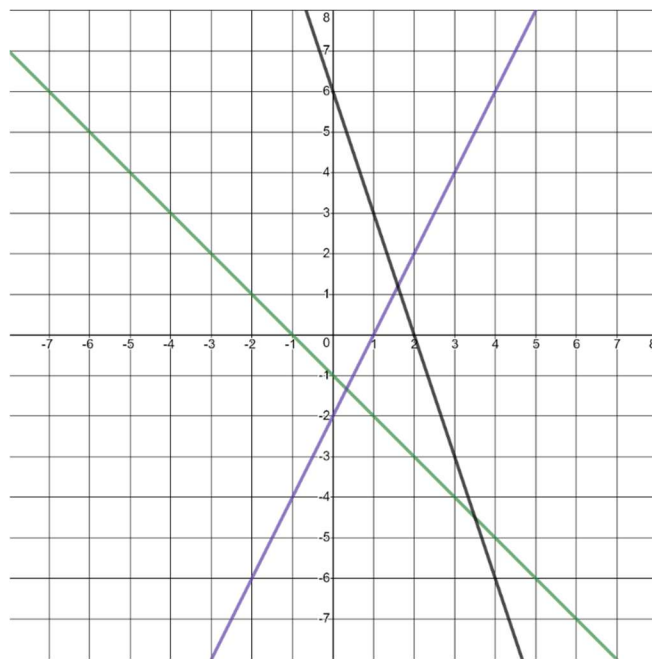
**Proficient**

5. Graph the following equations

a. $y = 2x + 1$	b. $y = \frac{2}{3}x - 4$	c. $y = 3(x + 2)$
d. $y = x + 3$	a. $y = -\frac{5x}{4}$	b. $y = -x + 2$
e. $y = -\frac{6x}{5} - 1$	c. $y - 2 = -\frac{5}{4}(x - 1)$	d. $y + 1 = \frac{2}{5}(x - 4)$
f. $y - 3 = 2(x + 1)$	e. $y = -\frac{1}{2}(x + 3)$	f. $y + 5 = -\frac{4}{3}(x - 1)$
g. $x + 2y + 6 = 0$	g. $3x + 6y - 12 = 0$	h. $x + 6y - 6 = 0$
h. $2x - 3y - 6 = 0$	i. $3x - y + 6 = 0$	j. $5x + 7y + 35 = 0$

**Proficient**

1. Find the equation of each of the following lines. Write the equation in all three forms.

**Extending**

2. Determine the equation of each of the following lines. Leave your answer in slope-intercept form.

a. Line with slope $\frac{3}{2}$ through $(6, -2)$	b. Line with slope $-\frac{2}{3}$ through $(-3, 1)$
c. Line through points $M(1, -3)$ and $N(7, -21)$	d. Line through points $A(24, 8)$ and $B(4, -7)$
e. Line parallel to $y = -\frac{6x}{5} - 1$ and through $(10, 2)$	f. Line parallel to $y = -x + 2$ and through $(8, 0)$
g. Line perpendicular to $y = \frac{x}{4} + 5$ and through $(10, 2)$	h. Line perpendicular to $y = -\frac{2x}{7}$ and through $(0, 2)$

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**Learning Goal 6.3**

Ability to move between all forms of the equation.

**Proficient**

1. Rewrite the following equations in both slope-point form and general form.

a.  $y = 2x + 1$

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

c.  $y = x + 3$

d.  $y = -\frac{5x}{4}$

e.  $y = -\frac{6x}{5} - 1$

f.  $y = -x + 2$

**Extending**

2. Rewrite the following equations in both slope-intercept form and general form.

a.  $y - 3 = 2(x + 1)$

b.  $y + 1 = \frac{2}{5}(x - 4)$

c.  $y = -\frac{1}{2}(x + 3)$

d.  $y - 2 = -\frac{5}{4}(x - 1)$

e.  $y + 5 = -\frac{4}{3}(x - 1)$

f.  $y = 3(x + 2)$

3. Rewrite the following equations in both slope-intercept form and slope-point form.

a.  $x + 2y + 10 = 0$

b.  $2x - 3y - 6 = 0$

c.  $3x + 6y - 12 = 0$

d.  $2x - y + 5 = 0$

e.  $x + 8y - 2 = 0$

f.  $5x + 7y + 11 = 0$

**Extending**

4. Write the equation in slope-intercept form of a line with

a. a slope of 3 through the point (2, 5)

b. a slope of  $-\frac{1}{3}$  through the point (-9, 2)

c. a slope of  $-\frac{5}{3}$  through the point (3, 0)

d. a slope of  $\frac{3}{2}$  through the point (7, -1)

e. a slope of  $\frac{3}{4}$  through the point (-10, 3)

f. a slope of -1 through the point (-1, -1)