



Math Summer Assignment for  
**Algebra 1**  
Wall Township Math Department  
Optional Summer Assignment



- ★ This summer assignment is intended to prepare you for the math course above.
- ★ You will find examples and video links to help you complete the practice.

**Skill 1: Determine the slope of a line in a variety of ways.**



Helpful Video Link:

- [How to find the slope between two points](#)
- [Finding the slope of a line from its graph](#)

Practice:

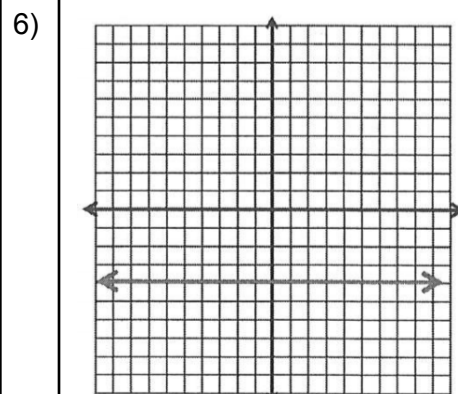
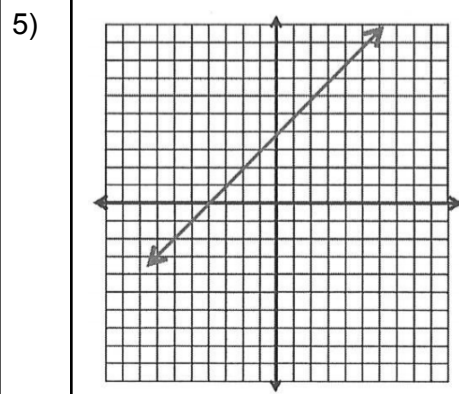
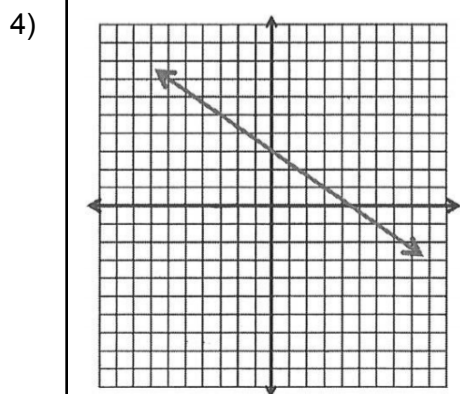
Determine the slope of the line through the given points.

1)  $(4, 6)$   $(2, 5)$

2)  $(8, -8)$   $(-3, 3)$

3)  $(-2, -8)$   $(3, 2)$

Determine the slope of the line.



## Skill 2: Use function tables



Helpful Video Link:

→ [Complete a Table of Values Given a Function Rule](#)

Practice:

Complete the function table using the given rule.

1) Rule:  $y = 2x - 5$

Table:

x	-5	0	5	10
y				

2) Rule:  $y = \frac{1}{2}x - 5$

Table:

x	-4	-2	0	2
y				

Determine the rule for each function table.

3) Rule?

$y =$  \_\_\_\_\_

Table:

x	1	2	3	4
y	10	14	18	22

4) Rule?

$y =$  \_\_\_\_\_

Table:

x	-1	0	1	2
y	3	-2	-7	-12

Create your own rule and function table below.

5) Rule?

$y =$  \_\_\_\_\_

Table:

x				
y				

6) Rule?

$y =$  \_\_\_\_\_

Table:

x				
y				

### Skill 3: Graphing linear equations



Helpful Video Link:

→ [Graphing Lines Slope Intercept Form](#)

Practice:

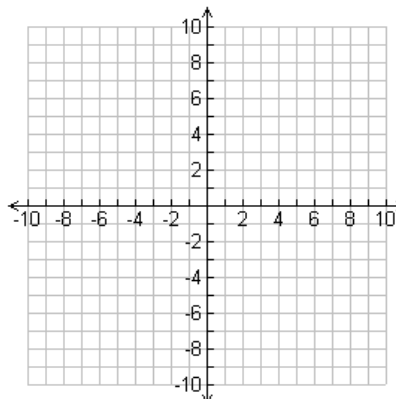
Complete the table and then use it to graph the line.

1)  $y = -4x + 2$

Table:

x				
y				

Graph:

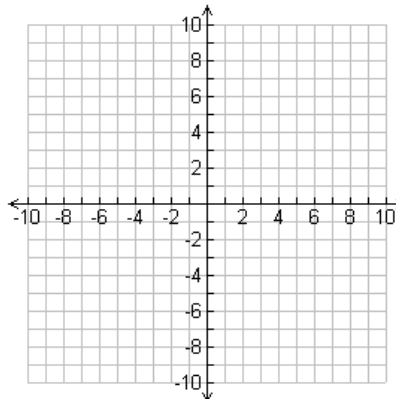


2)  $y = x + 5$

Table:

x				
y				

Graph:

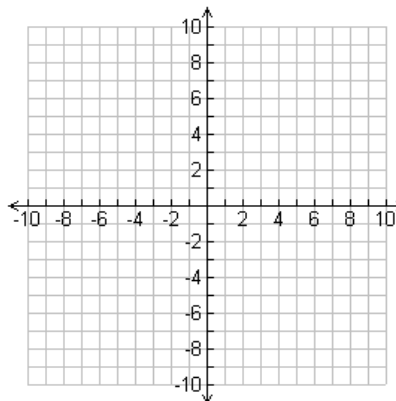


3)  $y = 2x$

Table:

x				
y				

Graph:



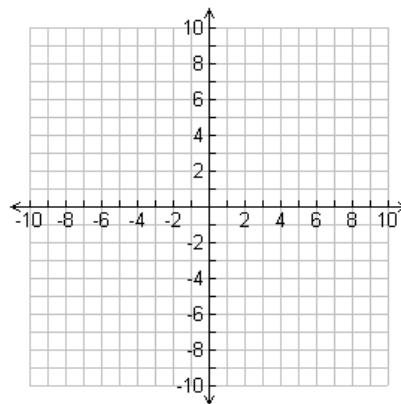
Find the y-intercept and the slope and then graph.

4)  $y = 2x + 1$

The slope of the line is \_\_\_\_\_.

The y-intercept is \_\_\_\_\_.

Graph:

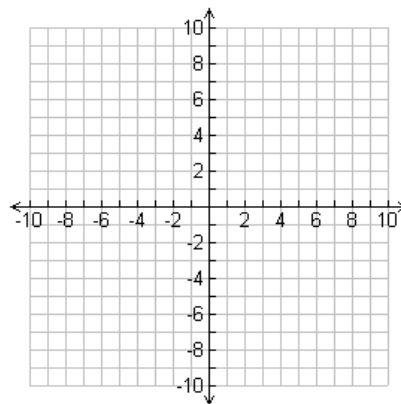


5)  $y = -\frac{1}{3}x - 4$

The slope of the line is \_\_\_\_\_.

The y-intercept is \_\_\_\_\_.

Graph:

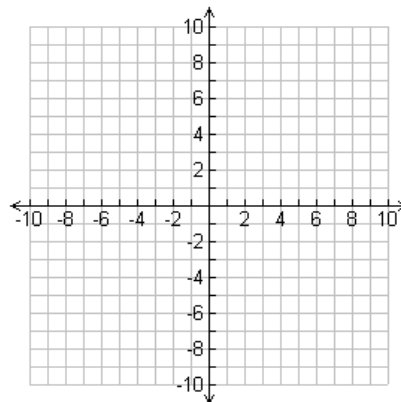


6)  $y = -3x + 2$

The slope of the line is \_\_\_\_\_.

The y-intercept is \_\_\_\_\_.

Graph:



#### Skill 4: Combining like terms



Helpful Video Link:

→ [Combining Like Terms](#)

Practice: Simplify the expressions.

1)	$-2c + 8c + 12bc$	2)	$14b + 19b^2 - 11 - 12b - 9b^2$
3)	$g^2 - 3g - 12g^4 - 6g^2 - 8g$	4)	$6x + 4y - 8x - 10x + 5y - 9$
5)	$a^2 + 7ab - 10ab + b^2$	6)	$72 + 5m - 7m - 50 + 2m$

## Skill 5: Integer Operations



Helpful Video Link:

→ [Integer Rules](#)

Practice: Simplify the expressions.

1)	$-7 + -9$	2)	$-23 - (-8)$
3)	$2 + -8$	4)	$50 - 75$
5)	$-8 \cdot -2$	6)	$10 \cdot -4$
7)	$-20 \div 5$	8)	$-6 \div -2$

## Skill 6: Solving Equations



Helpful Video Link:

→ [Solving Equations & Inequalities](#)

Practice: Solve for x.

1)	$13 + x = 62$	2)	$5x = 60$
3)	$10 + 7x = 45$	4)	$\frac{x}{5} - 1 = 10$
5)	$3x - 15 = 3$	6)	$\frac{x}{2} + 21 = 45$

## Skill 7: Solving Inequalities



Helpful Video Link:

→ [Solving Equations & Inequalities](#)

Practice:

Solve for  $x$  and then graph your answer on the number line.

1)  $5 + x < 12$



2)  $-3x \geq 15$



3)  $10 + 2x \leq 16$



4)  $\frac{x}{4} - 3 > 1$



5)  $2x - 8 < 4$



6)  $\frac{x}{-8} + 11 \leq 12$





**Skill 8: Standardized Assessment Practice**

- ★ The problems below are from different state tests. Please try each one.
- ★ If you have trouble, write a note or question to remind yourself where you stopped.
- ★ All problems should have work shown or a note/question.

1) Which of the expressions has a value of 4?  
Select **each** correct answer.

A.  $\sqrt[3]{64}$

B.  $\sqrt[3]{8}$

C.  $\sqrt{16}$

D.  $\sqrt{64}$

E.  $\sqrt{4}$

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2) In the equation shown, what is the value of  $n$ ?

$$\frac{9^7}{9^n} = 9^2$$

The value of  $n$  is: \_\_\_\_\_

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3) The graph of a function is shown on the coordinate plane.

Which table consists of the ordered pairs that are represented on the graph?

A. 

$x$	$y$
-1	1
0	2
2	4
4	6

B. 

$x$	$y$
-2	0
-1.5	0.5
0.5	2.5
3	5

C. 

$x$	$y$
-3	-1
-1	3
1	3
3	1

D. 

$x$	$y$
-4	-2
-0.5	1.5
0.5	2.5
4	3

4)	<p>Which functions are <b>not</b> linear? Select <b>three</b> functions.</p> <ul style="list-style-type: none"><li><input type="checkbox"/> A. <math>y = \frac{x}{5}</math></li><li><input type="checkbox"/> B. <math>y = 5 - x^2</math></li><li><input type="checkbox"/> C. <math>-3x + 2y = 4</math></li><li><input type="checkbox"/> D. <math>y = 3x^2 + 1</math></li><li><input type="checkbox"/> E. <math>y = -5x - 2</math></li><li><input type="checkbox"/> F. <math>y = x^3</math></li></ul>
5)	<p>A system of two linear equations is graphed on a coordinate plane. If the system of equations has infinitely many solutions, which statement must be true?</p> <ul style="list-style-type: none"><li>A. On the graph, there are no points <math>(x, y)</math> that satisfy both equations.</li><li>B. On the graph, there is exactly one point <math>(x, y)</math> that satisfies both the equations.</li><li>C. On the graph, any point <math>(x, y)</math> that satisfies one of the equations cannot satisfy the other equation.</li><li>D. On the graph any point <math>(x, y)</math> that satisfies one of the equations must also satisfy the other equation.</li></ul>