

Summer Math Activities for Students Entering Grade 8

Dear Student / Parent / Guardian:

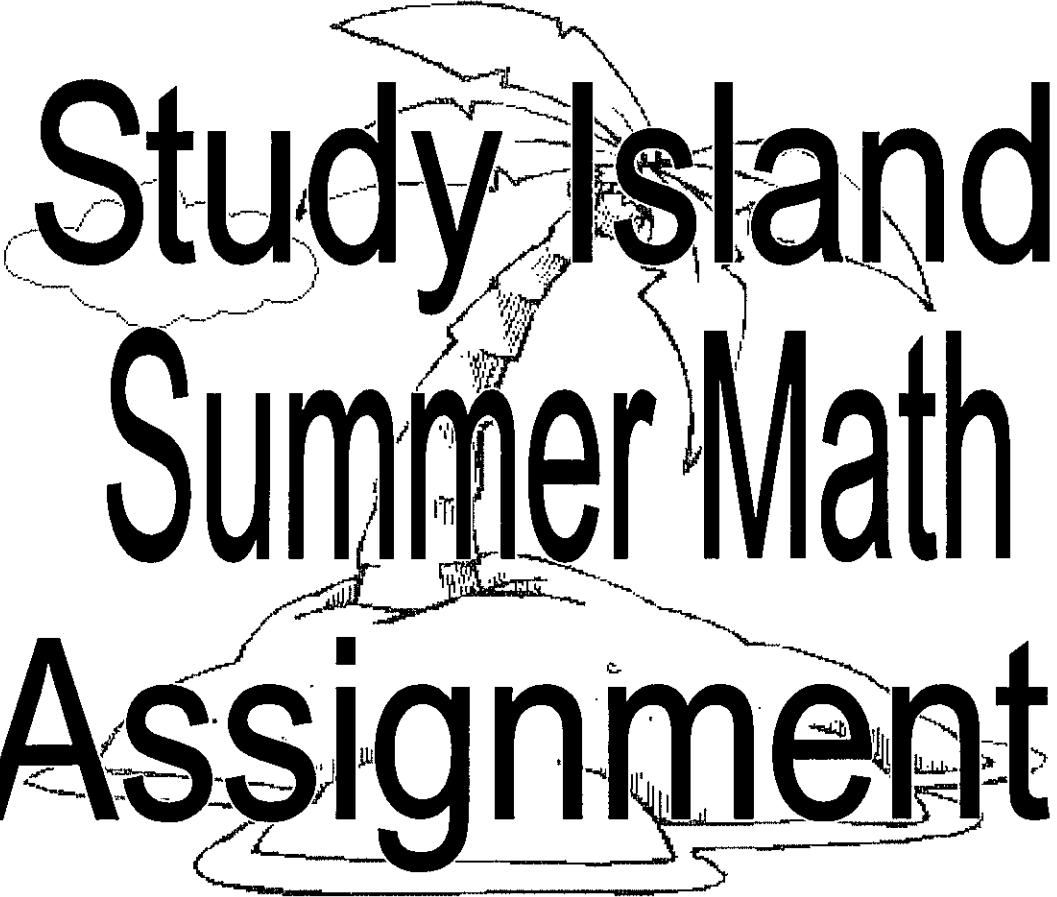
The following problems and websites are designed to allow you to practice your math skills throughout the summer in a fun way! Your assignment is to solve the attached problems and complete the grade 7-8 assignment on Study Island. Your teacher will collect your packet of problems and the Individual Summary Report print out of your results from Study Island during the first week of school in September. This will be the first grade of the new school year! *If you are new to Clifton School District, you will not be able to complete the Study Island Summer Assignment but you must complete the attached problems!*

The following websites can be a resource for you as you solve the word problems:

- Intro to Slope Intercept Form: <https://www.khanacademy.org/math/algebra/two-var-linear-equations/slope-intercept-form/v/slope-intercept-form>
- Slope Intercept Form from a Table: <https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-linear-equations-functions/write-slope-intercept-equations/v/slope-intercept-form-from-table>
- Find Slope from a Graph: <https://www.khanacademy.org/math/algebra/two-var-linear-equations/slope/v/slope-of-a-line>
- Graph from Slope Intercept Equation: <https://www.khanacademy.org/math/algebra/two-var-linear-equations/graphing-slope-intercept-equations/v/graphing-a-line-in-slope-intercept-form>
- Intro to Two-Step Equations: <https://www.khanacademy.org/math/algebra/one-variable-linear-equations/alg1-two-steps-equations-intro/v/why-we-do-the-same-thing-to-both-sides-two-step-equations>

Students who do not have computer access can go to the Clifton Public Library and request a Library Card that will grant them internet access. An electronic list of these websites is also posted on the Clifton website, <http://clifton.k12.nj.us/>

Enjoy your summer vacation!!!



Study Island Summer Math Assignment

PLEASE NOTE: If you are a new student to the district, you WILL NOT be able to complete this part of the Math Summer Packet because you have not been enrolled in Study Island.

Student Name _____

Parent Signature _____

(I am aware that this assignment is due the first week of school in September to my child's math teacher.) *If

packet is lost, please log onto www.clifton.k12.nj.us for an additional copy.

A portion of your summer Math packet is going to consist of Study Island assignment. Your teacher has posted an assignment on your Study Island account for you to complete. In order to complete the assignment, you must do the following:

- @ Log into www.studyisland.com
- @ Click on "Log in" → Enter *user name* and *password*
(User name is your ID#@cps and password is clifton)
- @ Click on "Summer Math Assignment" to view the list of assignments to complete

To receive full credit for this assignment, you must complete **3** out of the **10** topics listed.

Follow these steps to complete each assignment:

- @ Click on the assignments you choose to complete
- @ You can choose "Game Mode" or "Practice Mode". This is choice is highlighted in green.
- @ Click "Next" to begin assignment
- @ Click on "End Session" when you are notified that all 10 questions have been completed.
- @ **Parents Please Note:** In order to receive a blue ribbon, students must achieve a score of 70% for each topic. This is not required for completion of the assignment, however, students should score at least 60% for each set of 10 questions. If you choose to do over the number of questions assigned, please do not attempt to have students complete more than 30 questions in a single topic assigned for the summer.
- @ **WHEN YOU'RE DONE WITH YOUR ENTIRE SUMMER ASSIGNMENT, PLEASE PRINT YOUR INDIVIDUAL STUDENT REPORT AND BRING IT TO YOUR TEACHER.**
 - CLICK ON MY REPORTS
 - CLICK ON INDIVIDUAL STUDENT REPORT
 - SELECT YOUR PROGRAM: 7TH GRADE NJ STANDARDS MASTERY

- SELECT YOUR SUBJECT: MATH (STUDENT LEARNING STANDARDS)
- CLICK ON VIEW REPORT--RIGHT CLICK ON THE SCREEN AND SELECT PRINT. THIS WILL PRINT YOUR INDIVIDUAL STUDENT REPORT.

If needed, there is a red HELP tab on the top right to help navigate through any issues you may come across.

Make sure to try your personal best when completing each assignment. You have access to the scratch pad, highlighters, calculator, and timers if you choose to use them. Take your time and have fun!

Additional Practice**Investigation 4****Moving Straight Ahead**

1. Find the slope and y -intercept of the line represented by each equation.

a. $y = 2x - 10$

b. $y = 4x + 3$

c. $y = 4x - 4.5$

d. $y = 2.6x$

e. $y = 7x + 1$

2. Each table in (i.)–(v.) below represents a linear relationship. Do parts (a)–(c) for each table.

a. Find the slope of the line that represents the relationship.

b. Find the y -intercept for the graph of the relationship.

c. Determine which of the following equations represents the relationship:

$y = 3 - 4x \quad y = x + 6 \quad y = 4x - 3 \quad y = 3x - 1.5 \quad y = 2.5x$

i.

x	y
0	0
1	2.5
2	5
3	7.5
4	10

ii.

x	y
0	6
1	7
2	8
3	9
4	10

iii.

x	y
0	-1.5
1	1.5
2	4.5
3	7.5
4	10.5

iv.

x	y
1	-1
2	-5
3	-9
4	-13

v.

x	y
1	5
2	9
3	13
4	17

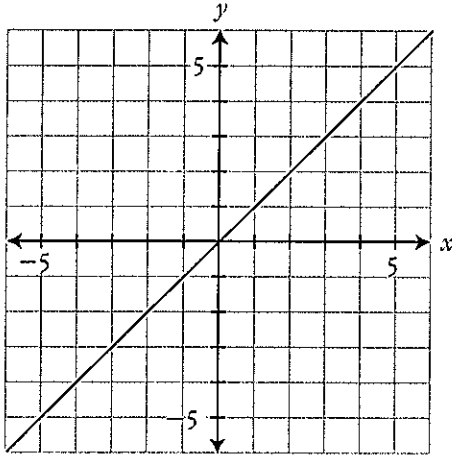
Additional Practice *(continued)*

Investigation 4

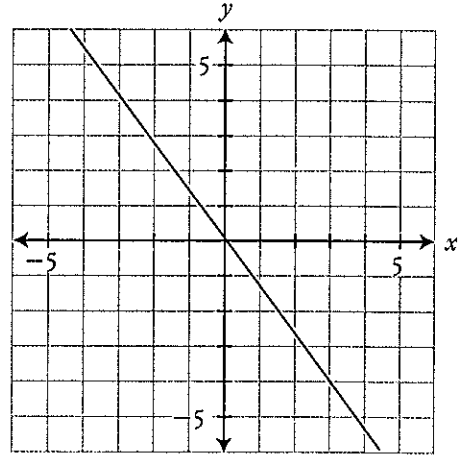
Moving Straight Ahead

3. For each of the lines below, find the slope and write an equation that represents the line.

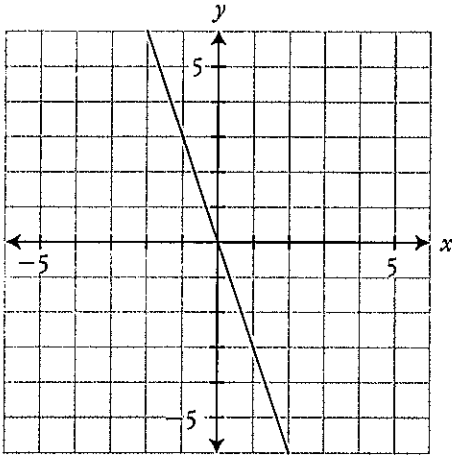
a.



b.



c.



4. Do parts (a)–(d) for each pair of points below.

- a. Plot the points on a coordinate grid, and draw the line through the points.
- b. Find the slope of the line through the points.
- c. Estimate the y-intercept from the graph.
- d. Using your answers from parts (a) and (b), write an equation for the line through the points.
 - i. $(0, 0)$ and $(-3, -3)$
 - ii. $(1, -1)$ and $(-3, 3)$

Additional Practice *(continued)*

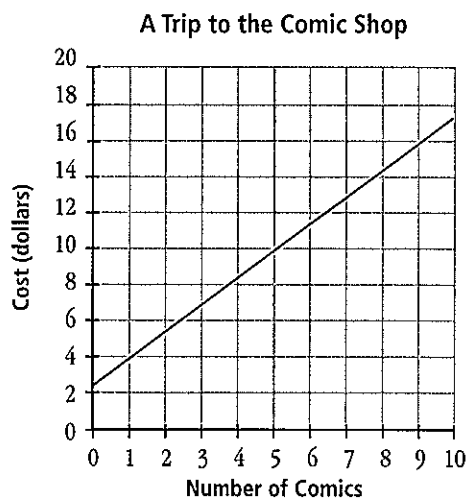
Investigation 4

Moving Straight Ahead

5. On Saturdays, Jim likes to go to the mall to play video games or pinball. Round-trip bus fare to and from the mall is \$1.80. Jim spends \$0.50 for each video or pinball game.
- Write an equation for the amount of money M it costs Jim to go to the mall and play n video or pinball games.
 - What is the slope of the line your equation represents? What does the slope tell you about this situation?
 - What is the y -intercept of the line? What does the y -intercept tell you about the situation?
 - How much will it cost Jim to travel to the mall and play 8 video or pinball games?
 - If Jim has \$6.75, how many video or pinball games can he play at the mall?

6. The graph below shows the total cost (including bus fare and the cost of comics) for Angie to go to the Comic Shop to buy new comic books.

- What is Angie's round-trip bus fare? Explain your reasoning.
- How much does a comic book cost at the Comic Shop? Explain.
- Write an equation that shows how much money M it costs Angie to buy n comic books at the Comic Shop. What information did you use from the graph to write the equation? Is this a proportional relationship?



Additional Practice *(continued)***Investigation 4****Moving Straight Ahead**

11. Here are some possible descriptions of a line:

Slope	y-intercept	x-axis
positive	positive	passes through the origin (0, 0)
equals 0	equals 0	crosses the x -axis to the right of the origin
negative	negative	crosses the x -axis to the left of the origin
		never crosses the x -axis

Use the descriptions above to describe the properties of the slope, y -intercept, and x -axis for the graph of each equation.

a. $y = x$

b. $y = 2x + 1$

c. $y = -5$

d. $y = 4 - 3x$

e. $y = -3 - x$

12. These two points determine a line: $(-2, 10)$ and $(1, 4)$. Which of these points is also on that line?

$(2, 0)$

$(2, 2)$

$(2, 10)$

Additional Practice: Digital Assessments

Investigation 4

Moving Straight Ahead

15. Which are interpretations of the slope of the equation $y = 2x - 1$? *Select all that apply.*

- As x increases by 2, y increases by 1.
- As x decreases by 2, y increases by 1.
- As x decreases by 2, y decreases by 1.
- As x increases by 1, y increases by 2.
- As x decreases by 1, y increases by 2.
- As x decreases by 1, y decreases by 2.

16. Circle the numbers that complete the equation of the line with a slope of 3 and a y -intercept of 5.

$$y = \begin{bmatrix} -5 \\ -3 \\ 3 \\ 5 \end{bmatrix} x + \begin{bmatrix} -5 \\ -3 \\ 3 \\ 5 \end{bmatrix}$$

17. Circle the numbers that complete the equation of the line that passes through the points $(1, -1)$ and $(-2, 0)$.

$$y = \begin{bmatrix} -\frac{1}{3} \\ -3 \\ -1 \\ 1 \\ 3 \end{bmatrix} x + \begin{bmatrix} -2 \\ -\frac{2}{3} \\ -\frac{1}{3} \\ 0 \\ \frac{2}{3} \end{bmatrix}$$

18. Write each equation in the box with the correct category. Some equations may fit in more than one category.

$$y = 3x \quad y = -2x + 5 \quad y = \frac{1}{2}x - 1 \quad y = 1 - x \quad y = -x \quad y = 2 - 3x$$

Positive Slope

Passes Through the Origin

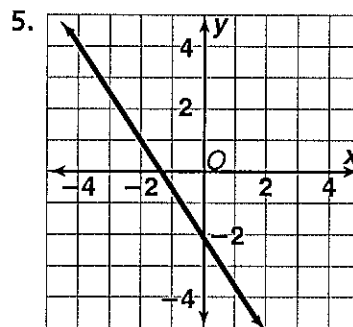
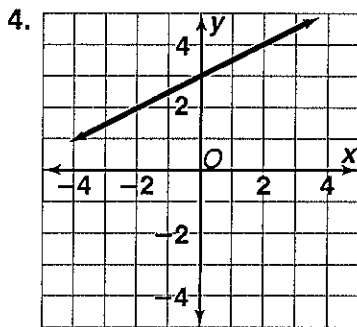
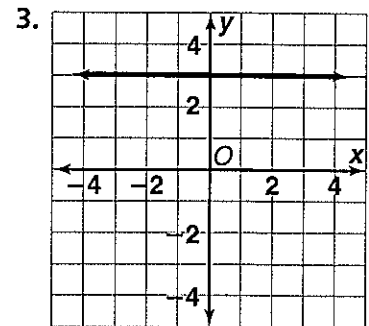
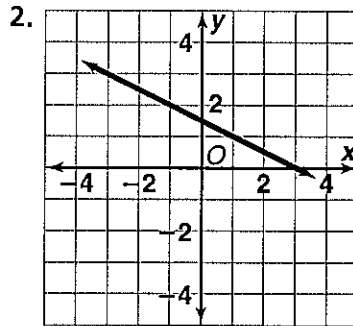
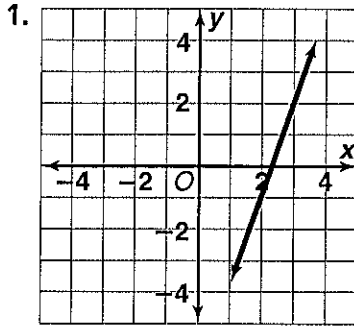
Positive y -intercept

Skill: Finding Slope

Investigation 4

Moving Straight Ahead

Find the slope of each line.



Skill: Finding Slope *(continued)*

Investigation 4

Moving Straight Ahead

For Exercises 6–7, the points from each table lie on a line. Use the table to find the slope of each line. Then graph the line.

6.

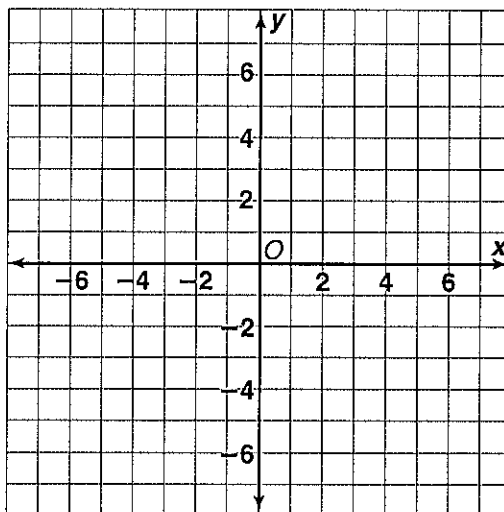
<i>x</i>	0	1	2	3	4
<i>y</i>	-3	-1	1	3	5

slope =

7.

<i>x</i>	0	1	2	3	4
<i>y</i>	5	3	1	-1	-3

slope =



Find the slope of the line that passes through each pair of points.

8. $A(1, 1), B(6, 3)$

9. $J(-4, 6), K(-4, 2)$

10. $P(3, -7), Q(-1, -7)$

11. $M(7, 2), N(-1, 3)$