

Mathematics/ Matemáticas



Roanoke City
PUBLIC SCHOOLS

Teacher Contact
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**Family Learning
Resources:
Remote Learning Edition
Recursos de
Aprendizaje Familiar:
Edición de Aprendizaje
Remoto**

Algebra 1/Álgebra 1



Family Learning Resources: Remote Learning Edition

Winter 2026 - 5 Days of Resources

Content Areas Included

- English Language Arts
- Mathematics
- Science
- Social Studies

Objective

This document will provide families with remote learning resources in the four core content areas for the anticipated extended closure of schools due to inclement weather.

Recommendations for Usage

- These necessary materials focus on reinforcing previously learned concepts - no new materials are covered.
- Students should be able to complete with minimal adult assistance. However, discussing the purpose and understandings from resources can help establish a deeper connection to the materials.
- Students are encouraged to write down questions that they might have about the materials so that they may be discussed with teachers.
- In addition to the completion of these materials, RCPS recommends that students take time to read - either independently or with others.

Questions & Follow Up Notes

Please do not hesitate to reach out to your student's teachers with any questions. These resources are designed to support remote learning during school closures and help minimize disruptions to instruction. **Students should bring this booklet with them when they return to school.**



Recursos de Aprendizaje Familiar: Aprendizaje Remoto



Invierno 2026 – 5 días de recursos

Áreas de contenido

- Lenguaje (Inglés)
- Matemáticas
- Ciencias
- Estudios Sociales

Objetivo

Este documento ofrece a las familias recursos de aprendizaje remoto en las cuatro áreas académicas principales, pensados para apoyar la continuidad educativa durante cierres escolares prolongados debido a las inclemencias del tiempo.

Recomendaciones de Uso

- Estos materiales necesarios se centran en reforzar conceptos aprendidos previamente - no se cubre material nuevo.
- Los estudiantes deberían poder completar las actividades con una asistencia mínima de un adulto. Sin embargo, conversar sobre el propósito y los aprendizajes de los recursos puede ayudar a establecer una conexión más profunda con el material.
- Se anima a los estudiantes a escribir las preguntas que puedan tener sobre los materiales para que puedan ser comentadas con los maestros.
- Además de completar estos materiales, RCPS recomienda que los estudiantes dediquen tiempo a la lectura, ya sea de manera independiente o con otras personas.

Preguntas y notas de seguimiento

Por favor, no dude en comunicarse con los maestros de su estudiante si tiene alguna pregunta. Estos recursos están diseñados para apoyar el aprendizaje remoto durante los cierres escolares y ayudar a minimizar las interrupciones en la instrucción. **Los estudiantes deben traer este folleto cuando regresen a la escuela.**



A.EO.1 Algebraic Expressions

1. Translate the following algebraic expression into a verbal expression: $-4(x + 3)$
2. Translate each algebraic expression into a verbal expression. Then compare and contrast the two verbal expressions. What do you notice?

a) $\sqrt{x} - 4$

b) $\sqrt{x - 4}$

3. Write an algebraic expression for each verbal expression.

Verbal Expression	Algebraic Expression
The difference between a number and five	
Five less than a number	
A number less five	
The difference between five and a number	

4. Write an algebraic expression for each verbal expression.

a) The product of the cube root of 5 and a number

b) The quotient of a number cubed and five

5. A high school is having a can food drive.

- The freshman class collected 54 more cans than the sophomore class.
- The junior class collected three times the number of cans collected by the sophomore class.
- The senior class collected ten cans less than the sophomore class.

Write an algebraic expression in one variable to model the total number of cans collected at the school.

A.EI.1 Solving Linear Equations and Inequalities

- 1) Cassie is planning a birthday party for her little brother and wants to rent a snow cone machine. She will also need to buy the flavored syrup, ice, and paper cones. She has at most \$50 to spend.
- The rental of the snow cone machine costs \$25 for the day.
 - The flavored syrup, ice, and the paper cones will cost \$0.70 per serving.

What is the greatest number of snow cones Cassie can serve? Show your work/thinking.

- 2) Jarrah needs no less than \$159 to purchase a new guitar. He already has \$38 in his savings account. He has a plan to rake and bag leaves in his neighborhood to make more money. He decides to charge \$5 a bag. What is the minimum number of full bags of leaves that Jarrah needs to rake in order to have enough money to buy the guitar? Show your work/thinking.

- 3) Andre correctly solved an equation using the steps shown:

$$\begin{aligned}3(x + 2) &= 3x + 4 \\3x + 6 &= 3x + 4 \\3x + 6 - 3x &= 3x + 4 - 3x \\6 &= 4 \\6 - 4 &= 4 - 4 \\2 &= 0\end{aligned}$$

What does Andre's work show us about the type of solution to the equation? How do you know?

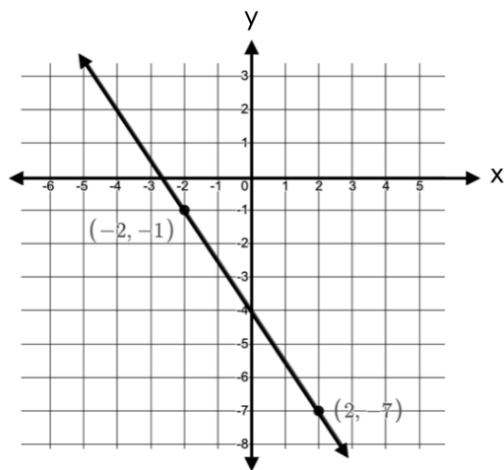
- 4) For what value of k will the equation have infinitely many solutions? How do you know?

$$-2(4x + 1) = \frac{1}{2}kx - 2$$

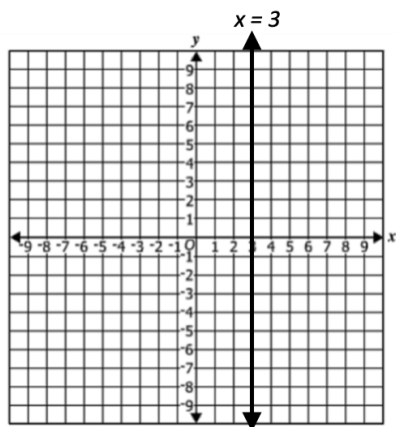
A.F. 1 Linear Functions

$$\text{The slope of a line given two points is } m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{\text{rise}}{\text{run}}$$

- 1) The line graphed below passes through the points $(-2, -1)$ and $(2, -7)$. Find the slope of the line.



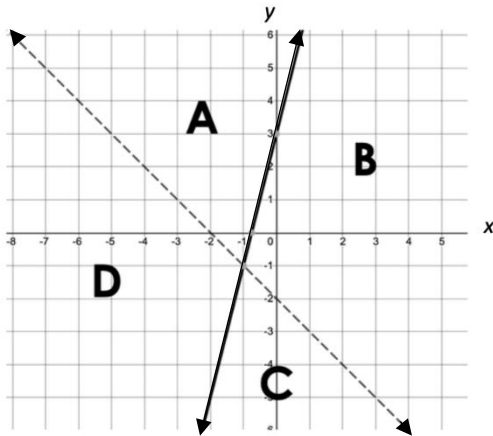
- 2) The graph below shows the line $x = 3$. Describe the slope of the line.



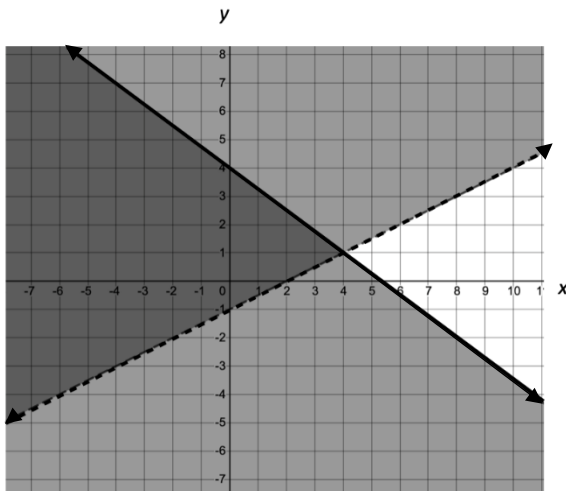
- 3) What is the slope of the line represented by the equation $\frac{2}{5}y = 2x + 4$? Show your work/thinking.
- 4) What is the slope of the line that passes through the points $(5, 2)$ and $(3, -1)$? Show your work/thinking.
- 5) A line passes through the points $(2, a)$ and $(4a, 5)$ and has a slope of $\frac{1}{2}$. Find the value of a .

A.EI.2 Systems of Equations and Inequalities

- 1) Avery has correctly started to the graph of the system of inequalities $\begin{cases} y \geq 4x + 3 \\ y < -x - 2 \end{cases}$. Which region would Avery need to shade to complete the graph of this system? How do you know?



- 2) The graph of a system of inequalities is shown below.



Select all the points listed in the chart that are solutions to this system of inequalities.

$(-4, -3)$	$(4, 1)$	$(-4, -1)$
$(3, 4)$	$(8, -2)$	$(-4, 7)$

A.F.1/A.F.2 Functions

1) Circle the tables that represent y as a function of x .

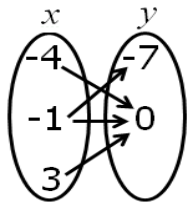
x	y
-3	1
1	-2
5	-4
-3	-5

x	y
-1	3
-2	6
-2	0
-5	8

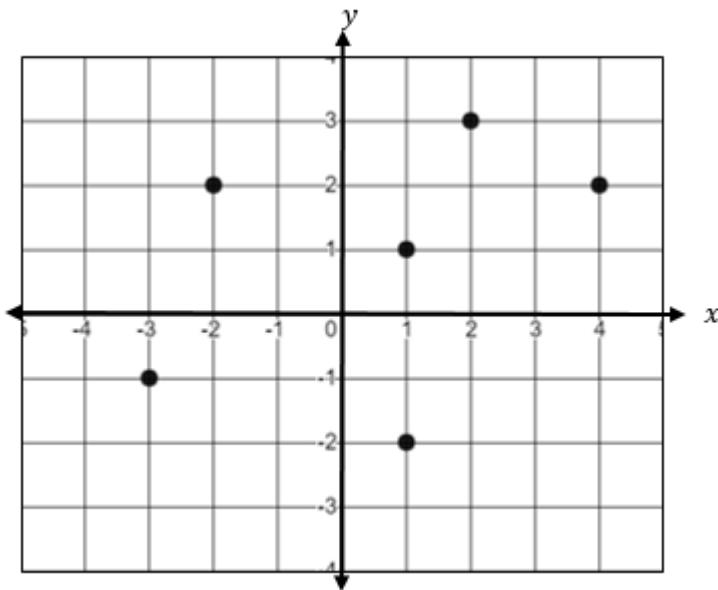
x	y
-1	-5
0	5
1	-2
2	-5

2) Relation H is shown. Does Relation H represent y as a function of x ? Explain why or why not.

Relation H



3) Six points of a relation are shown. Remove one point on the graph so that the resulting relation represents y as a function of x .



4) What are all of the values of x that would result in this relation NOT representing y as a function of x ?
 $\{(-3, 2), (0, 2), (x, -2), (3, -2), (2, 3), (-2, 5)\}$