Rising Coordinate Algebra Summer Math Packet

Dear Parents,

Rockdale County Public Schools is committed to providing the best math education possible for your child. Due to the cumulative nature of mathematics, in order for your child to be successful in the coming school year, he/she must possess mastery of many concepts from his/her previous math classes. For this reason, we have created a summer math packet to ensure your child is up to date on his/her prerequisite math skills.

1. Complete the practice problems embedded in the summer packet **for the students who will be enrolled in Coordinate Algebra during the Fall of 2020**. The use of DESMOS calculator can be found in their ClassLink calculator link on their laptop.

2. Students will submit their answers to the practice problems by clicking a link to a Microsoft Form. Answers will be checked and students will be given automatic feedback to see whether their answer is correct or incorrect.

3. The use of www.khanacademy.org can be helpful for students to use. Type in the learning target topic(s) in the search menu. Here, your son/daughter will find tutorials and extra practice problems. Have him/her watch the tutorials and do the extra practice problems. This website will let your child know if he/she is doing the work correctly.

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Week 1

Prerequisite Skill: Number Sense (Place Value)

Learning Targets:

- ✓ I can identify the place value of every digit in a number written in standard form.
- ✓ I can translate a number form a verbal representation.
- ✓ I can translate a mixed number from a verbal representation.

Practice Problems: Select the best answer choice for each problem. Show your work in the boxes or on a separate sheet of paper.

1. What digit is in ten thousands place in the number 3,652,987? (1 Point)

   - ○ 2
   - ○ 3
   - ○ 5
   - ○ 6

2. Write the following words as a number: * (1 Point)

   forty trillion, six billion, nine hundred million, two thousand, fourteen

   - ○ 406,902,014
   - ○ 4,069,002,014
   - ○ 40,069,002,014
   - ○ 40,006,900,002,014

3. Write the following words as a number: * (1 Point)

   four hundred million, three hundred seven thousand, three

   - ○ 400,373
   - ○ 40,307,003
   - ○ 400,307,003
   - ○ 400,370,003

4. What digit is in hundredths place in the number 345.926? (1 Point)

   - ○ 2
   - ○ 5
   - ○ 6
   - ○ 9

5. Write the following number in words: (1 Point)

   45.017

   - ○ forty-five and seventeen
   - ○ forty-five and seventeen tenths
   - ○ forty-five and seventeen hundredths
   - ○ forty-five and seventeen thousandths

6. Write the following words as a mixed number: (1 Point)

   three and fourteen hundredths

   - ○ $3\frac{1}{4}$
   - ○ $3\frac{14}{10}$
   - ○ $3\frac{14}{100}$
   - ○ $3\frac{14}{1000}$

Prerequisite Skill: Fluency	**Learning Targets:** ✓ I can order fractions, decimals, and percentages. ✓ I can convert between fractions, decimals, and percentages. ✓ I can identify greatest common factors. ✓ I can identify least common multiples.

Practice Problems: Select the best answer choice for each problem. Show your work in the boxes or on a separate sheet of paper.

1. Which number has the least value?
(1 Point)

$\frac{61}{100}$, 0.60, 0.57, $\frac{2}{3}$

- ◯ $\frac{61}{100}$
- ◯ 0.6
- ◯ 0.57
- ◯ $\frac{2}{3}$

2. Which number has the greatest value?
(1 Point)

36%, $\frac{41}{100}$, $\frac{39}{100}$, 0.38

- ◯ 36%
- ◯ $\frac{41}{100}$
- ◯ $\frac{39}{100}$
- ◯ 0.38

3. Convert this percentage into a decimal.
(1 Point)

35%

- ◯ 35
- ◯ $\frac{35}{100}$
- ◯ 3.5
- ◯ 0.35

4. Convert this fraction into a decimal.
(1 Point)

$\frac{1}{5}$

- ◯ 0.2
- ◯ 0.5
- ◯ 1.5
- ◯ 5

5. Identify the greatest common factor between 30 and 42.
(1 Point)

- ◯ 3
- ◯ 6
- ◯ 2
- ◯ 27

6. Identify the least common multiple between 30 and 42.
(1 Point)

- ◯ 2
- ◯ 3
- ◯ 6
- ◯ 210

Week 2

Prerequisite Skill: Rounding

Learning Targets:

- ✓ I can round decimals to a specific place value.
- ✓ I can explain how decimals are rounded.

Practice Problems: Select the best answer choice for each problem. Show your work in the boxes or on a separate sheet of paper.

1. Round 123.86 to the nearest tenth.
(1 Point)

- ○ 123.8
- ○ 124.0
- ○ 123.9
- ○ 123.7

2. Round 0.0541 to the nearest hundredth
(1 Point)

- ○ 0.1
- ○ 0.05
- ○ 0.054
- ○ 0.06

3. Round 7.987 to the nearest hundredth.
(1 Point)

- ○ 7.99
- ○ 7.98
- ○ 7.90
- ○ 8.00

4. Round 2,014.2486 to the nearest thousandth.
(1 Point)

- ○ 2,014.25
- ○ 2,014.2487
- ○ 2,014.2
- ○ 2,014.249

5. When asked to round 1.045 to the nearest tenth, what will the result be? *
(1 Point)

- ○ 1.0 because the 4 is too low to round up the 0
- ○ 1.1 becasue the 4 causes the 0 to round up
- ○ 1.1 because the 5 in the thousandths place rounds up the 4 in the hundredths place
- ○ 1.05 because the 5 in the thousandths place rounds up in the hundredths place

Prerequisite Skill: Operations with Fractions

Learning Targets:

- ✓ I can simplify fractions.
- ✓ I can perform the four basic operations with fractions.

Practice Problems: Select the best answer choice for each problem. Show your work in the boxes or on a separate sheet of paper.

1. Simplify the following fraction: (1 Point)

$\frac{12}{30}$

- ◯ $\frac{2}{5}$
- ◯ $\frac{3}{5}$
- ◯ $\frac{3}{2}$
- ◯ $\frac{31}{18}$

2. Simplify the following fraction: (1 Point)

$\frac{32}{72}$

- ◯ $\frac{11}{8}$
- ◯ $\frac{3}{4}$
- ◯ $\frac{1}{2}$
- ◯ $\frac{4}{9}$

3. Add the following fractions: (1 Point)

$\frac{2}{3} + \frac{4}{5} =$

- ◯ $\frac{2}{3}$
- ◯ $\frac{6}{8}$
- ◯ $\frac{22}{15}$
- ◯ $\frac{60}{13}$

4. Subtract the following fractions: (1 Point)

$\frac{2}{3} - \frac{5}{9}$

- ◯ $\frac{19}{9}$
- ◯ $\frac{1}{9}$
- ◯ $\frac{7}{3}$
- ◯ $\frac{13}{16}$

5. Multiply the following fractions: (1 Point)

$\frac{3}{7} \times \frac{8}{9}$

- ◯ $\frac{5}{3}$
- ◯ $\frac{3}{7}$
- ◯ $\frac{8}{21}$
- ◯ $\frac{9}{10}$

6. Divide the following fractions: (1 Point)

$\frac{3}{4} \div \frac{7}{8}$

- ◯ $\frac{6}{7}$
- ◯ $\frac{7}{10}$
- ◯ $\frac{1}{2}$
- ◯ $\frac{25}{12}$

Week 3

Prerequisite Skill: Order of Operations	**Learning Targets:** ✓ I can determine how parentheses and brackets affect expressions. ✓ I can use parentheses and brackets to group an expression within a multi-step expression. ✓ I can evaluate expressions with parentheses and brackets.

Practice Problems: Select the best answer choice for each problem. Show your work in the boxes or on a separate sheet of paper.

1. Simplify: *
(1 Point)

$9 + 15 \div 5 \times 13$

- 95
- 70
- 64
- 48

2. Simplify: *
(1 Point)

$14 + 18 \div 2 \times 18 - 7$

- 68
- 169
- 410
- 215

3. Simplify: *
(1 Point)

$(9 + 33 - 6) \div 6 - 3^2$

- -8
- -5
- -3
- -4

4. Simplify: *
(1 Point)

$6 + [4^2 + (11 + 10 \div 2)]$

- 38
- 75
- 93
- 63

5. Simplify: *
(1 Point)

$124 - 3 \times (7 + 5^2)$

- 15
- 79
- 28
- 27

6. Simplify: *
(1 Point)

$116 - 5 \times (18 + 10^2)$

- -474
- -1023
- -862
- -539

Prerequisite Skill: Integer Operations	**Learning Targets:** ✓ I can add integers. ✓ I can subtract integers. ✓ I can multiply integers. ✓ I can divide integers.

Practice Problems: Select the best answer choice for each problem. Show your work in the boxes or on a separate sheet of paper.

1. Add the following integers:
(1 Point)

$-8 + 12$

- ◯ -20
- ◯ -4
- ◯ 4
- ◯ 20

2. Subtract the following integers:
(1 Point)

$3 - 31$

- ◯ -34
- ◯ -28
- ◯ 28
- ◯ 34

3. Multiply the following integers:
(1 Point)

$4 \times (-9)$

- ◯ -36
- ◯ -5
- ◯ 5
- ◯ 36

4. Divide the following integers:
(1 Point)

$-132 \div (-11)$

- ◯ -121
- ◯ -12
- ◯ 12
- ◯ 121

5. Subtract the following integers:
(1 Point)

$-12 - 21$

- ◯ -33
- ◯ -9
- ◯ 9
- ◯ 33

6. Add the following integers:
(1 Point)

$-5 + (-10)$

- ◯ -15
- ◯ -5
- ◯ 5
- ◯ 15

Week 4

Prerequisite Skill: Reviewing Conversion Factors	**Learning Targets:** ✓ I can use ratios to convert measurement units. ✓ I can identify units of measure in the standard measurement system. ✓ I can identify units of measure in the metric system.

Practice Problems: Select the best answer choice for each problem. Show your work in the boxes or on a separate sheet of paper.

1. Given that 1 quart = 4 cups, how many cups are in 6 quarts? (1 Point)

- ○ 1.5 *cups*
- ○ 24 *cups*
- ○ $\frac{2}{3}$ *cups*
- ○ $\frac{4}{6}$ *cups*

2. Given that 1 inch = 2.54 cm, how many centimeters are in 5 inches? (1 Point)

- ○ 0.51 *cm*
- ○ 12.7 *cm*
- ○ 1.97 *cm*
- ○ 2.54 *cm*

3. Which of the units of measure are not in the standard measurement system? (1 Point)

- ○ quarts
- ○ feet
- ○ milliliters
- ○ pounds

4. Which of these units of measure are not in the metric system? (1 Point)

- ○ centimeters
- ○ kiloliter
- ○ grams
- ○ ounces

5. Which of these units of measure are in the standard measurement system? (1 Point)

- ○ pints
- ○ meters
- ○ grams
- ○ liters

6. Which of these units of measure are in the metric system? (1 Point)

- ○ gallon
- ○ feet
- ○ micrometer
- ○ cup

Prerequisite Skill: Graphing Lines	**Learning Targets:** ✓ I can identify the slope-intercept form of an equation. ✓ I can identify the slope and y-intercept of an equation. ✓ I can identify the graph a linear equation in slope-intercept form.

Practice Problems: Select the best answer choice for each problem. Show your work in the boxes or on a separate sheet of paper.

1

A linear equation written in the form y = mx + b is in what form?
(1 Point)

- ○ y-intercept
- ○ point-slope form
- ○ slope-intercept form
- ○ standard form

2

In the equation y = mx + b, which variable identifies the slope and y-intercept?
(1 Point)

- ○ slope is x, y-intercept is y
- ○ slope is m, y-intercept is x
- ○ slope is x, y-intercept is b
- ○ slope is m, y-intercept is b

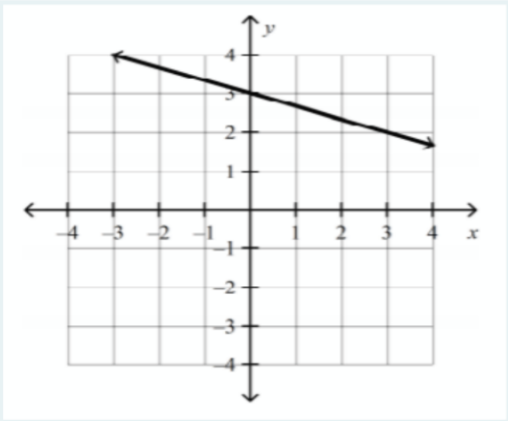
3

Find the slope and y-intercept of the linear equation.
(1 Point)

$y = -7x + 2$

- ○ $slope: -\frac{1}{7};\ y-intercept:\ 2$
- ○ $slope: \frac{1}{2};\ y-intercept:\ -7$
- ○ $slope: -7;\ y-intercept:\ 2$
- ○ $slope: 2;\ y-intercept:\ -7$

4

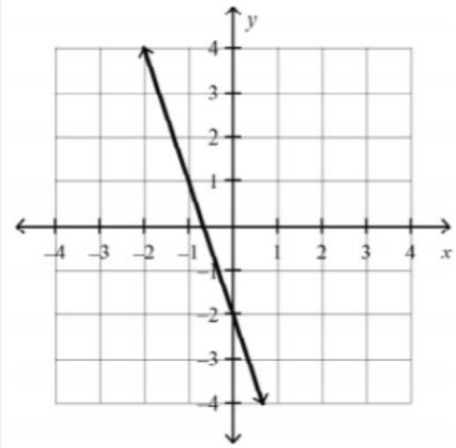


Which equation matches the following linear graph? *
(1 Point)

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

5

Which linear equation represents the graph? *
(1 Point)



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

Week 5

Prerequisite Skill: Writing Linear Equations from Word Problems	**Learning Targets:** ✓ I can write a linear equation from context. ✓ I can identify the rate of change (slope). ✓ I can identify the initial value (y-intercept).

Practice Problems: Select the best answer choice for each problem. Show your work in the boxes or on a separate sheet of paper.

1. Alex rents a car for one day. The charge is $18 plus $0.12 per mile. Alex wants to spend exactly $30. Write an equation to represent the situation *
(1 Point)

- ○ $18 - 0.12x = 30$
- ○ $18 + 0.12x = 30$
- ○ $30 - 0.12 = 30x$
- ○ $18x + 0.12 = 30$

2. Nick opens a savings account with $50. Each week after, he deposits $15. He wants to save $500. Write an equation to show this situation. *
(1 Point)

- ○ $50 + 15x = 500$
- ○ $15x = 500$
- ○ $50x + 15 = 500$
- ○ $50 - 15x = 500$

3. Miss Violet is buying granola bars for her students. She already has 16 granola bars in her desk and needs a total of 100 bars. They are sold in packs of 12. Write an equation to show how many more boxes of granola bars she needs. *
(1 Point)

- ○ $16 - 12x = 100$
- ○ $16x + 12 = 100$
- ○ $12x - 16 = 100$
- ○ $16 + 12x = 100$

4. Jenny wants to save $900 to go to Puerto Rico. She saves $45 each week. Her brother gives her $180. Write an equation to find how many weeks she must save. *
(1 Point)

- ○ $900 = 45x + 180$
- ○ $45x - 180 = 900$
- ○ $45x = 900$
- ○ $180 + 900 = 45x$

5. A building contractor buys 525 metal bars. Because he is buying more than 500 bars, the wholesaler gives him a discount of $420. The total price is $3,780. Write an equation to find the cost per bar. *
(1 Point)

- ○ $525b + 420 = 3780$
- ○ $-420 - 525b = 3780$
- ○ $525b - 420 = 3780$
- ○ $3780 = 420 + 525b$

Prerequisite Skill: Solving Two-Step Equations	**Learning Targets:** ✓ I can find the solution(s) that satisfy a two-step equation.

Practice Problems: Select the best answer choice for each problem. Show your work in the boxes or on a separate sheet of paper.

1. Solve the equation:
(1 Point)

$5x - 4 = 11$

- ○ $x = 3$
- ○ $x = 9$
- ○ $x = 6$
- ○ $x = 1$

2. Solve the equation: *
(1 Point)

$-2x + 5 = 17$

- ○ $x = -13$
- ○ $x = -2$
- ○ $x = -6$
- ○ $x = -7$

3. Solve the equation: *
(1 Point)

$8 - 24x = 20$

- ○ $x = -2$
- ○ $x = -\frac{1}{2}$
- ○ $x = -\frac{11}{19}$
- ○ $x = 0$

4. Solve the equation:
(1 Point)

$\frac{7}{3}x = 21$

- ○ $x = 9$
- ○ $x = 2$
- ○ $x = 26$
- ○ $x = 10$

5. Which of the following equations have the solution x = -3? *
(1 Point)

- ○ $2x - 4 = 6$
- ○ $-5 + 3x = 4$
- ○ $8x + 7 = 31$
- ○ $9 - 2x = 15$

Week 6

Prerequisite Skill: Systems of Equations	**Learning Targets:** ✓ I can find the solution that satisfies each equation when I solve systems of equation. ✓ I can use the solution that satisfies both equations to make decisions in the real world. ✓ I know that in solving systems of equation, I can use graphing, elimination and/or substitution skills**.**

Practice Problems: Select the best answer choice for each problem. Show your work in the boxes or on a separate sheet of paper.

1. Tickets to the carnival cost $9.00 for adults and $7.50 for children. A group of 11 people went to the carnival and paid $87 for tickets. How many adult tickets were purchased? How many children's tickets were purchased? *
(1 Point)

- ○ 3 adult tickets and 8 children's tickets were purchased
- ○ 8 adult tickets and 3 children's tickets were purchased
- ○ 5 adult tickets and 6 children's tickets were purchased
- ○ The number of each ticket purchased can't be determined from the given information.

2. What is the solution to the system?

$3x + y = 10$
$-3x + 2y = 65$ *
(1 Point)

- ○ $(-5, 5)$
- ○ $(-5, 25)$
- ○ There are infinitely many solutions to this system of equations.
- ○ There are no solutions to this system of equations.

3. The sum of two numbers is 32. The difference between those numbers is -2. What are the numbers? *
(1 Point)

- 17 and 19
- 15 and -2
- 15 and 17
- It is not possible to determine the numbers with the given information.

4. What is the solution to the system?

$6x - 2y = 58$
$-4x + 3y = -42$ *
(1 Point)

- $(9, -2)$
- $(3.75, 16)$
- There are infinitely many solutions to this system of equations.
- There are no solutions to this system of equations.

5. Samuel invests $2,600 into two savings accounts. One account earns 4% annual interest; the other earns 3.5% annual interest. At the end of 1 year, Samuel has earned $99.50 in interest. How much did he invest at each rate? *
(1 Point)

- $1,200 at 4% and $1,400 at 3.5%
- $1,200 at 3.5% and $1,400 at 4%
- $900 at 4% and $1,700 at 3.5%
- $900 at 3.5% and $1,700 at 4%

6. What is the solution to the system?

$y = 3x + 1$
$-12x + 4y = 4$ *
(1 Point)

- $(3, -12)$
- $(7.5, 11.6)$
- There are infinitely many solutions to this system of equations.
- There are no solutions to this system of equations.

Prerequisite Skill: Translating Between Representations of Functions (Equations, Graphs, Tables, and Ordered Pairs)	**Learning Targets:** ✓ I can write an equation given a situation. ✓ I can draw a graph given a situation. ✓ I can write an equation given a table.

Practice Problems: Select the best answer choice for each problem. Show your work in the boxes or on a separate sheet of paper.

1. Write an equation for the verbal description. (1 Point)

Three times a number plus one is y

- ◯ 3 + x + 1 = y
- ◯ 3x = y + 1
- ◯ 3y + 1 = x
- ◯ y = 3x + 1

2. Which ordered pair is a solution to the equation 5x - 3 = y (1 Point)

- ◯ (−1, 5)
- ◯ (−5, 2)
- ◯ (3, 4)
- ◯ (0, − 3)

3. If the value of x is -1, for the equation x + 2y = 8, what is the value of y? * (1 Point)

- ◯ 3.5
- ◯ -2
- ◯ `15
- ◯ 6

4. The equation 4x + 3y = 17 produces what type of graph? (1 Point)

- ◯ exponential
- ◯ linear
- ◯ quadratic
- ◯ cubic

5. Which answer describes the equation y = 2x - 1? * (1 Point)

- ◯ It is a function.
- ◯ The slope is -1.
- ◯ There is only one solution to the equation.
- ◯ It has a negative slope.