

GRADE 6

TEKS/STAAR-BASED LESSONS

TEACHER GUIDE

Scope and Sequence
Six Weeks 1

TEKSING TOWARD STAAR SCOPE AND SEQUENCE
Grade 6 Mathematics

SIX WEEKS 1

Lesson	TEKS-BASED LESSON	STAAR Category Standard	Spiraled Practice	Student Activity	Problem Solving	Skills and Concepts Homework
Lesson 1 ____ days	6.2A /classify whole numbers, integers, and rational numbers using a visual representation such as a Venn diagram to describe relationships between sets of numbers 6.2B /identify a number, its opposite, and its absolute value	Category 1 Supporting Category 1 Supporting	SP 1 SP 2	SA 1 SA 2	PS 1 PS 2	Homework 1 Homework 2
Lesson 2 ____ days	6.2C /locate, compare, and order integers and rational numbers using a number line	Category 1 Supporting	SP 3 SP 4	SA 1 SA 2	PS 1 PS 2	Homework 1 Homework 2
Lesson 3 ____ days	6.4F /represent benchmark fractions and percents such as 1%, 10%, 25%, 33 1/3%, and multiples of these using 10 by 10 grids, strip diagrams, number lines, and numbers 6.4E /represent ratios and percents with concrete models, fractions and decimals	Category 1 Supporting Category 1 Supporting	SP 5 SP 6	SA 1 SA 2 SA 3 SA 4 SA 5	PS 1 PS 2 PS 3	Homework 1 Homework 2 Homework 3
Lesson 4 ____ days	6.11A /graph points in all four quadrants using ordered pairs of rational numbers	Category 3 Readiness	SP 7 SP 8	SA 1 SA 2	PS 1	Homework 1 Homework 2
Lesson 5 ____ days	6.3E /multiply and divide rational numbers fluently 6.3B /determine, with and without computation, whether a quantity is increased or decreased when multiplied by a fraction, including values that are greater than or less than one	Category 2 Readiness Category 2 Supporting	SP 9 SP 10 SP 11	SA 1 SA 2 SA 3	PS 1 PS 2	Homework 1 Homework 2
Lesson 6 ____ days	6.7B /distinguish between expressions and equations verbally, numerically, and algebraically 6.7C /determine if two expressions are equivalent using concrete models, pictorial models, ...	Category 1 Supporting Category 1 Supporting	SP 12 SP 13	SA 1 SA 2 SA 3	PS 1 PS 2 PS 3	Homework 1 Homework 2
Lesson 7 ____ days	6.8A /extend previous knowledge of triangles and their properties to include the sum of angles of a triangles, the relationship between the lengths of the sides and measures of angles in a triangle, and determining when three lengths form a triangle	Category 3 Supporting	SP 14 SP 15	SA 1 SA 2 SA 3	PS 1 PS 2 PS 3	Homework 1 Homework 2

TEKSING TOWARD STAAR SCOPE AND SEQUENCE
Grade 6 Mathematics

SIX WEEKS 1

Lesson	TEKS-BASED LESSON	STAAR Category Standard	Spiraled Practice	Student Activity	Problem Solving	Skills and Concepts Homework
Lesson 8 ____ days	6.10A /model and solve one-variable, one-step equations and inequalities that represent problems, including geometric concepts 6.10B /determine if the given value(s) make(s) one-variable, one-step equations or inequalities true	Category 2 Readiness Category 2 Supporting	SP 16 SP 17	SA 1 SA 2 SA 3	PS 1 PS 2	Homework 1 Homework 2
Lesson 9 ____ days	6.8C /write equations that represent problems related to the area of rectangles, ... where dimensions are positive rational numbers 6.8D /determine solutions for problems that represent problems involving the area of rectangles, ... where dimensions are positive rational numbers	Category 3 Supporting Category 3 Readiness	SP 18 SP 19	SA 1	PS 1	Homework 1 Homework 2
Lesson 10 ____ days	6.14E /describe the information in a credit report and how long it is retained 6.14F /describe the value of credit reports to borrowers and to lenders 6.14D / explain why it is important to establish a positive credit history	Category 4 Supporting Category 4 Supporting Not Tested	SP 20	SA 1	PS 1	Homework 1 Homework 2
Review Assessment 2 days	Six Weeks 1 Open-Ended Review Six Weeks 1 Assessment					

TEACHER NOTES:

Materials List

GRADE 6 MATERIALS LIST - SIX WEEKS 1

SIX WEEKS	LESSON	ITEM	QUANTITY
1	1	Copies of Math Notes Page Copies of Problem-Solving Plan Copies of Problem-Solving Questions	2 per student 1 per student 1 per student
1	2	Integer Cards and Blank Cards (copy on cardstock, laminate and cut apart to make one class set), roll of adding machine tape, black marker, tape or ticky tack to secure numbers to number line	1 set per class
1	3	8 -3' x 18" strips of construction paper 1 set of colored markers, 2 pair of scissors	1 set per pair of students
1	4	1 coordinate grid 1 Coordinate Caper Record Sheet	1 per student 1 per student
1	5	2 - 3 x 5 note cards	1 set per pair of students
1	6	A set of 20 color tiles (all the same color) 20 counters 10 rectangular strips of colored card stock (1 inch by 3 inches) 10 1-inch squares 4- 3 by 5 note cards	1 set per pair of students 1 set per pair of students 1 set per pair of students 1 set per pair of students 1 set per pair of students
1	7	ruler protractor	1 per student
1	8	Make cardstock copies of the Equation/Inequality cards. Cut apart and put in a baggie Make cardstock copies of the Solution set cards. Cut apart and put 1 set in a baggie. 1 sheet of white paper	1 set per group of 4 1 set per pair of students 1 per student
1	9	No Materials Needed	
1	10	No Materials Needed	

**Mini-Assessment
Answer Key**

GRADE 6 TEKS-BASED ASSESSMENTS – SIX WEEKS 1
TEKS Correlation and Answer Key for Mini-Assessments

Mini-Assessment And TEKS Assessed	Question Number									
	1	2	3	4	5	6	7	8	9	10
Lesson 1 MA 6.2A/6.2B	C 6.2A	H 6.2A	C 6.2B	J 6.2B	D 6.2B	F 6.2A	B 6.2A	J 6.2A	A 6.2A	G 6.2B
Lesson 2 MA 6.2C	C	J	A	J	B	F	B	J	B	H
Lesson 3 MA 6.4E/6.4F	A 6.4E	H 6.4E	D 6.4E	G 6.4E	C 6.4E	F 6.4E	A 6.4F	J 6.4F	C 6.4F	J 6.4F
Lesson 4 MA 6.11A	B	H	B	H	B	J	A	F	C	J
Lesson 5 MA 6.3E/6.3B	D 6.3E	H 6.3E	A 6.3B	F 6.3E	11 6.3E	H 6.3B	C 6.3E	G 6.3E	D 6.3E	G 6.3E
Lesson 6 MA 6.7B/6.7C	B 6.7B	J 6.7B	B 6.7C	H 6.7C	A 6.7C	H 6.7C	C 6.7B	J 6.7B	A 6.7C	H 6.7B
Lesson 7 MA 6.8A	D	F	C	H	C	G	B	G	C	H
Lesson 8 MA 6.10A/6.10B	C 6.10A	H 6.10A	D 6.10B	J 6.10B	22 6.10A	G 6.10A	63 6.10A	G 6.10A	B 6.10B	G 6.10B
Lesson 9 MA 6.8C/8D	C 6.8D	G 6.8D	H 6.8C	D 6.8C	124 6.8D	H 6.8D	12.5 6.8D	G 6.8D	B 6.8D	H 6.8C
Lesson 10 MA 6.14D/ 6.14E/6.14F	C 6.14F	J 6.14E	D 6.14E	H 6.14E	D 6.14E	J 6.14D	D 6.14D	F 6.14D	D 6.14F	G 6.14D

Six Weeks 1
Lesson 1

6.2A/6.2B Lesson and Assessment

Lesson Focus

For TEKS 6.2A and 6.2B, students should be able to demonstrate an understanding of how to represent and manipulate numbers and expressions. Students are expected to apply mathematical process standards to represent and use rational numbers in a variety of forms.

Students are expected to identify a number, its opposite, and its absolute value. Students are also expected to classify whole numbers, integers, and rational numbers using a visual representation such as a Venn diagram to describe relationships between sets of numbers.

Process Standards Incorporated Into Lesson

- 6.1B** Use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution
- 6.1D** Communicate mathematical ideas, reasoning and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate
- 6.1F** Analyze mathematical relationships to connect and communicate mathematical ideas

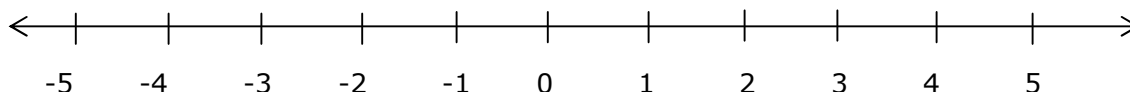
Materials Needed for Lesson

1. **Math Background**
Per Student: 1 Math Notes page
2. **Problem Solving 1:** **Per Student:** 1 copy of Problem-solving Plan for math notebook, 1 copy of Problem-solving Questions (in Student Book)
3. **Per Student:** 1 copy of all pages for student activities for this lesson, Skills and Concepts Homework, and mini-assessment for this lesson

Math Background-Understanding Rational Numbers

A group of items or numbers is called a set. A part of that set is called a subset. The set of numbers we use in our every day lives is the set of real numbers. These are the numbers that are located on a number line. One subset of the real numbers is the set of whole numbers. Whole numbers are the numbers 0, 1, 2, 3, 4... Each of these numbers has an opposite 0, -1, -2, -3, -4... When the whole numbers and their opposites are joined together the set of integers is created.

The set of integers are indicated in set notation as $\{\dots-4, -3, -2, -1, 0, 1, 2, 3, 4\dots\}$. These numbers are used to label a number line with the negative numbers located to the left of zero and the positive numbers located to the right of zero.



When a number of the form $\frac{a}{b}$ is created where a and b are both integers but $b \neq 0$, then the set of rational numbers is created. For example, the ratio of 2 to 3 creates $\frac{2}{3}$, so $\frac{2}{3}$ is a rational number. The ratio of 10 to 2 creates $\frac{10}{2}$ or 5 which is a whole number as well as a rational number.

Any rational number can be plotted on a number line.

Example: Plot $\left\{\frac{2}{3}, \frac{5}{4}, \frac{1}{4}, \frac{7}{2}, 3\right\}$ on the number line.

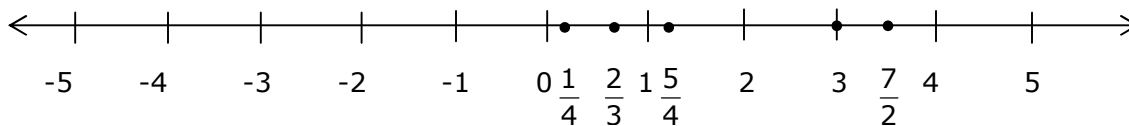
$\frac{1}{4}$ is located one-fourth the distance from 0 to 1.

$\frac{2}{3}$ is located two-thirds the distance from 0 to 1.

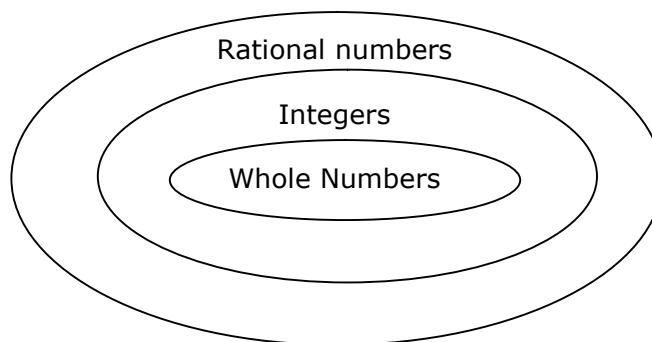
$\frac{5}{4}$ is located one-fourth the distance from 1 to 2.

3 is located at the whole number 3.

$\frac{7}{2}$ is located one-half the distance from 3 to 4.



The relationship between these sets of subsets of the real numbers can be shown with a Venn diagram.



This diagram shows that all whole numbers are integers, and all integers are rational numbers. When a set is included completely in another set on the diagram, then all members of the smaller set are also members of the larger set.

The opposite of a number is the number on the number line that is the same distance from zero on the number line just on the other side of zero. 3 is 3 units from 0 on the right side. -3 is 3 units from 0 on the left. 3 and -3 are opposites. When referring just to the distance but not which side of 0, you are referring to the absolute value of the number. Thus 3 and -3 both have absolute value 3. The symbol used for absolute value is $| |$. $|-5|$ is read "the absolute value of negative 5". Since -5 is 5 units from 0, the absolute value of negative 5 is 5. We write $|-5| = 5$. A whole number will be its own absolute value. The absolute value of a negative number will be a positive number, thus its opposite.

Some decimals are rational numbers and some decimals are not rational numbers. If the decimal terminates (ends) OR it has repeating digits, then it is a rational number.

1.35, 1.4, 1.075 are terminating decimals and thus are rational numbers. They can be expressed as a ratio of two integers.

$$1.35 = \frac{135}{100} \quad 1.4 = \frac{14}{10} \quad 1.075 = \frac{1075}{1000}$$

$0.\bar{3}$ and $0.\bar{6}$ are two of the most commonly used repeating decimals.

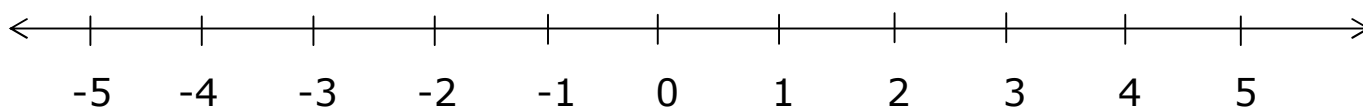
$$0.\bar{3} = \frac{1}{3} \quad 0.\bar{6} = \frac{2}{3}$$

2.12345.... and 0.545445444.... are examples of decimals that are not rational numbers. They do not terminate nor do they have repeating digits.

Understanding Rational Numbers

A group of items or numbers is called a **set**. A part of that set is called a **subset**. The set of numbers we use in our every day lives is the set of **real numbers**. These are the numbers that are located on a number line. One subset of the real numbers is the set of **whole numbers**. Whole numbers are the numbers 0, 1, 2, 3, 4... Each of these numbers has an opposite 0, -1, -2, -3, -4... When the whole numbers and their opposites are joined together the set of **integers** is created.

The set of integers are indicated in set notation as $\{\dots-4, -3, -2, -1, 0, 1, 2, 3, 4\dots\}$. These numbers are used to label a number line with the negative numbers located to the left of zero and the positive numbers located to the right of zero. We usually do not write the + sign on the whole numbers.



When a number of the form $\frac{a}{b}$ is created where a and b are both integers but $b \neq 0$, then the set of **rational numbers** is created. The ratio of 2 to 3 creates $\frac{2}{3}$, so $\frac{2}{3}$ is a rational number. The ratio of 10 to 2 creates $\frac{10}{2}$ or 5 which is a whole number as well as a rational number. Any rational number can be plotted on a number line.

Example: Plot $\left\{\frac{2}{3}, \frac{5}{4}, \frac{1}{4}, \frac{7}{2}, 3\right\}$ on the number line.

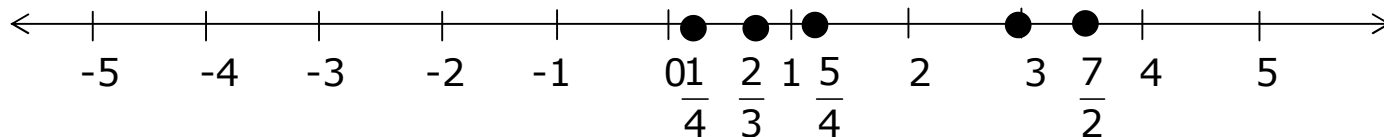
$\frac{1}{4}$ is located one-fourth the distance from 0 to 1.

$\frac{2}{3}$ is located two-thirds the distance from 0 to 1.

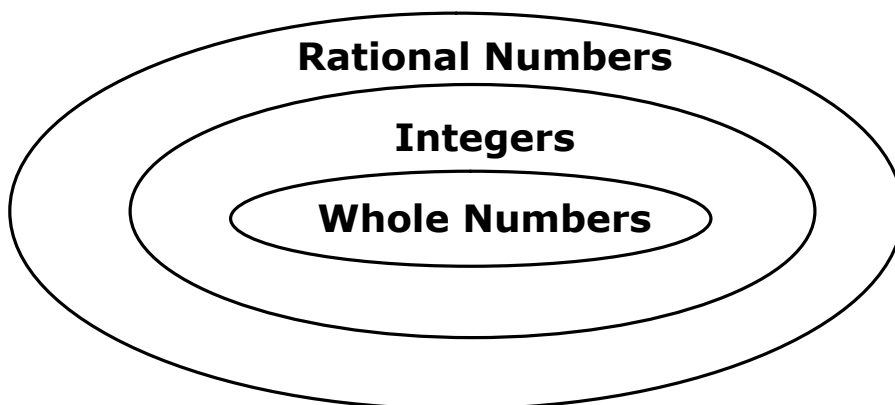
$\frac{5}{4}$ is located one-fourth the distance from 1 to 2.

3 is located at the whole number 3.

$\frac{7}{2}$ is located one-half the distance from 3 to 4.



The relationship between these sets of subsets of the real numbers can be shown with a Venn diagram.



This diagram shows that all whole numbers are integers, and all integers are rational numbers. When a set is included completely in another set on the diagram, then all members of the smaller set are also members of the larger set.

7 is a whole number, integer, and a rational number. -15 is an integer and a rational number. $\frac{15}{7}$ is a rational number only. It is not an integer or whole number.

Some decimals are rational numbers and some decimals are not rational numbers. If the decimal terminates (ends) OR it has repeating digits, then it is a rational number.

1.35, 1.4, 1.075 are terminating decimals and thus are rational numbers. They can be expressed as a ratio of two integers.

$$1.35 = \frac{135}{100}$$

$$1.4 = \frac{14}{10}$$

$$1.075 = \frac{1075}{1000}$$

$0.\overline{3}$ and $0.\overline{6}$ are two of the most commonly used repeating decimals.

$$0.\overline{3} = \frac{1}{3}$$

$$0.\overline{6} = \frac{2}{3}$$

2.12345.... and 0.545445444.... are examples of decimals that are not rational numbers. They do not terminate nor do they have repeating digits.

Problem-Solving Model

Step	Description of Step
1	Analyze the given information. <ul style="list-style-type: none">• Summarize the problem in your own words.• Describe the main idea of the problem.• Identify information needed to solve the problem.
2	Formulate a plan or strategy. <ul style="list-style-type: none">• Draw a picture or diagram.• Guess and check.• Find a pattern.• Act it out.• Create or use a chart or table.• Work a simpler problem.• Work backwards.• Make an organized list.• Use logical reasoning.• Brainstorm.• Write a number sentence or an equation
3	Determine a solution. <ul style="list-style-type: none">• Estimate the solution to the problem.• Solve the problem.
4	Justify the solution. <ul style="list-style-type: none">• Explain why your solution solves the problem.
5	Evaluate the process and the reasonableness of your solution. <ul style="list-style-type: none">• Make sure the solution matches the problem.• Solve the problem in a different way.

Problem-Solving Questions

Directions:

- **Work with a partner.**
- **Write your answers on notebook paper.**
- **Answer questions 1-3.**
- **Complete the solution to the problem(s).**
- **Answer questions 4-10.**

1. What is the main idea of this problem?
2. What are the supporting details in this problem?
3. What skills, concepts, and understanding of math vocabulary are needed to be able to answer this problem?
4. Did this problem involve mathematics arising in everyday life, society, or the work place?
5. What is a good problem solving strategy for this problem?
6. Can you explain how you used any math tools, mental math, estimation, or number sense to solve this problem?
7. Did this problem involve using multiple representations (symbols, diagrams, graphs, math language)?
8. Did you use any relationships to solve this problem?
9. How can you justify your solution to the problem?
10. How can you check for reasonableness of your solution to this problem?

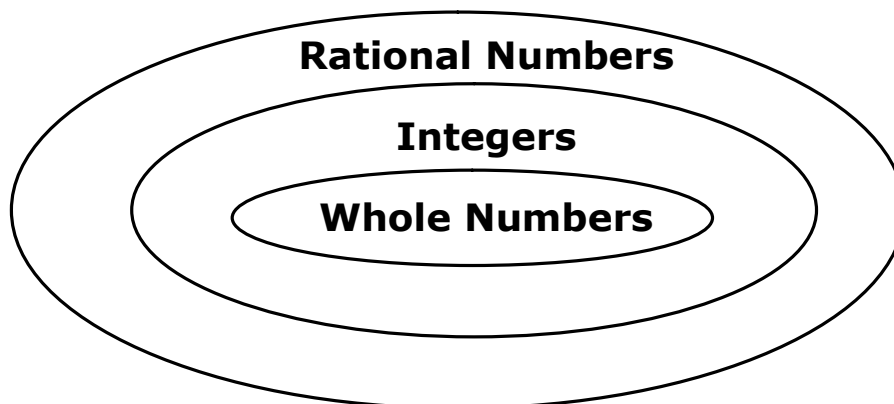
Problem-Solving 1

Problem 1: Which of the following statements are true? Use T or NT.

- _____ 1. All integers are less than 0.
- _____ 2. Any rational number can be expressed as the ratio of two integers.
- _____ 3. All integers are also whole numbers.
- _____ 4. All integers are also rational numbers.
- _____ 5. The set $\{8, 8.5, 10, -23\}$ are all rational numbers.
- _____ 6. The set $\{-3, 19, 20, 0, -1\}$ are all integers.

For any statement you listed as NT, explain your reasoning.

Problem 2: Place -6 , 0 , 3.5 , $\frac{12}{4}$, $-3\frac{1}{2}$ and $0.\overline{45}$ in the appropriate place on the Venn diagram.



Student Activity 1

Work with your partner to answer the following questions.

1. Complete the following statements by filling in the blank with an appropriate word or words.

A group of objects or numbers is called a _____.

A part of a set is called a _____.

The set $\{0, 1, 2, 3, 4, 5, 6, \dots\}$ is called the set of _____.

The set $\{\dots-6, -5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5, 6, \dots\}$ is called the set of _____.

The set of numbers that can be expressed as the ratio of two integers is the set of _____ numbers.

The numbers -8 and 8 are called _____.

The distance a number is from 0 on a number line is called the _____ value of the number.

2. Place a \checkmark in each column that names a set the given number belongs to.

	Rational Number	Integer	Whole Number
-6			
0			
3.5			
$\frac{17}{4}$			
-4.3			
$-5\frac{2}{3}$			
$1,250$			
$0.\overline{12}$			

3. Name 3 integers that are NOT whole numbers.

4. Name 3 rational numbers that are NOT integers.

5. Name a rational number that would be between 3 and 3.5 on a number line.

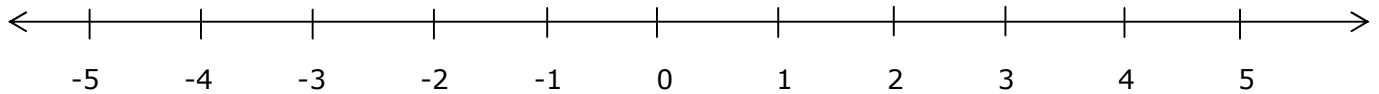
6. Draw a Venn diagram that shows the relationship among rational numbers, integers, and whole numbers.

7. Place the following numbers in the appropriate set on the Venn diagram you drew in Question 6.

17 -43 1.5 $\frac{21}{3}$ 9 125 $0.\bar{4}$ $-2\frac{1}{2}$

8. Place and label the following rational numbers on the given number line.

$\frac{1}{2}$ $2\frac{1}{2}$ -4.5 $3\frac{1}{2}$ $-\frac{1}{2}$ $\frac{8}{2}$ $-1\frac{1}{3}$ $0.\bar{3}$



9. Name 2 whole numbers that will be between 3 and 6.5 on a number line.
10. Using a W for whole numbers, I for integers, and R for rational numbers, identify all the sets of numbers that have members in the given set.

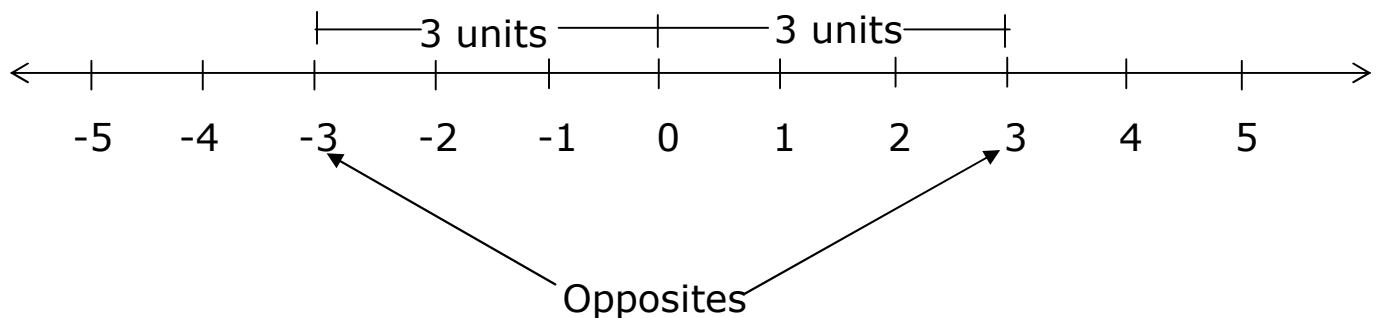
$\{-1, -6, -14, -13\}$ _____

$\left\{\frac{22}{7}, 3.14, 4, 0\right\}$ _____

$\left\{-20, -1.1, \frac{4}{3}, -3\right\}$ _____

Understanding Opposites and Absolute Value

The **opposite of a number** is the number on the number line that is the same distance from zero on the number line just on the other side of zero. 3 is 3 units from 0 on the right side. -3 is 3 units from 0 on the left. 3 and -3 are opposites.



When referring to the distance only but not which side of 0, you are referring to the **absolute value** of the number. Thus 3 and -3 both have absolute value 3. The symbol used for absolute value is $| |$. $|-5|$ is read "the absolute value of negative 5".

Since -5 is 5 units from 0, the absolute value of negative 5 is 5. We write $|-5| = 5$.

A whole number will be its own absolute value. The absolute value of a negative number will be a positive number, thus its opposite.

Problem-Solving 2

Identify the opposite and absolute value of each of the following numbers.

Number	Opposite	Absolute Value
8		
-14.5		
$3\frac{1}{3}$		
129		
0		
-10		

Which number, or numbers, in the table above have equivalent absolute values and opposite?

Can the absolute value of a number ever be a negative number? Explain

Student Activity 2

Work with your partner to answer the following questions.

1. In your own words, describe opposite numbers.
2. In your own words, describe absolute value.
3. Identify the following statements as True or Not True. Use T or NT.

_____ Only whole numbers have opposites.

_____ The absolute value of a negative number is a positive number.

_____ The opposite of an integer is a whole number.

_____ The opposite and absolute value of 0 is 0.

_____ The distance between 4 and the opposite of 4 is 8 units.

4. In golf, a score of 0 is considered par. A score under par, like -3 , is a better golf score than a score above par, like 3 or $+3$.

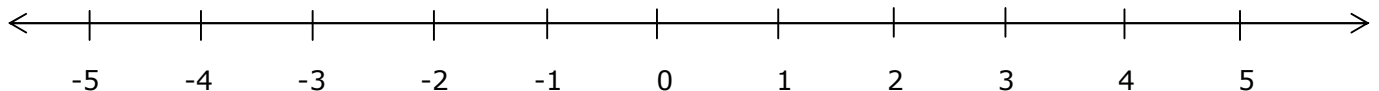
Golfer	Danny	Jim	Jose	Charlie
Score	-3	$+4$	$+1$	-1

Which two golfers had opposite scores?

Which golfers had scores that are whole numbers?

5. Graph and label the following numbers on the number line below.

- A: the opposite of 4
- B: the absolute value of $\frac{1}{2}$
- C: the opposite of $-3\frac{1}{3}$



6. Give the opposite of each number below.

8 _____

-4 _____

0 _____

$-\frac{1}{2}$ _____

7. Give the value of each of the following.

$|-2| = \underline{\hspace{2cm}}$

$|12| = \underline{\hspace{2cm}}$

$|32| = \underline{\hspace{2cm}}$

$|-0.25| = \underline{\hspace{2cm}}$

8. Give the distance between each given number and its opposite.

$2 \underline{\hspace{2cm}}$

$5 \underline{\hspace{2cm}}$

$-3 \underline{\hspace{2cm}}$

$-10 \underline{\hspace{2cm}}$

$0 \underline{\hspace{2cm}}$

9. Give the distance between each given number and its absolute value.

$1 \underline{\hspace{2cm}}$

$6 \underline{\hspace{2cm}}$

$-8 \underline{\hspace{2cm}}$

$-18 \underline{\hspace{2cm}}$

$100 \underline{\hspace{2cm}}$

10. In each pair of numbers, circle the number that is farther from 0.

8 and -9

6 and -5

-10 and -11

3 and -2

14 and -13

11. Describe "the opposite of the opposite of a number".

Name the opposite of the opposite of each number.

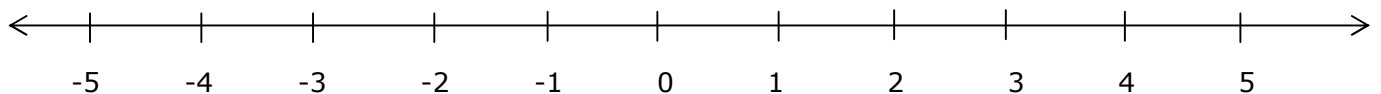
3

-6

12

-100

12. On the number line below, graph all numbers whose absolute value is less than or equal to 3.



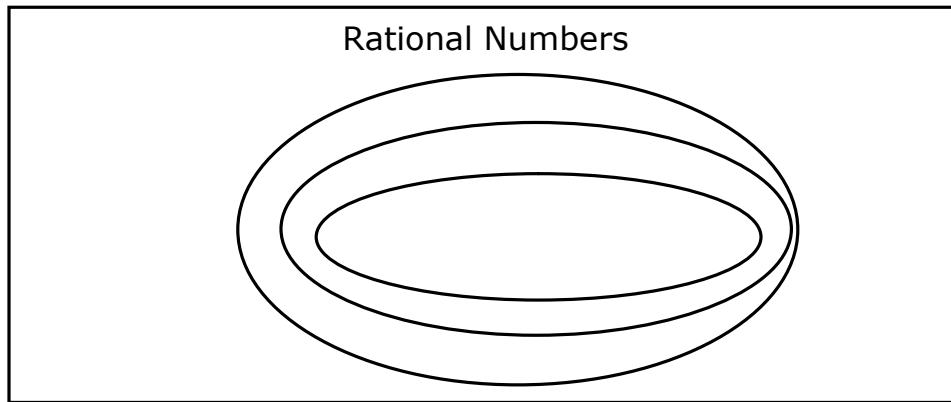
NAME _____

DATE _____

SCORE ___/5

6.2A/6.2B Skills and Concepts Homework 1

1. Fill in the Venn diagram below showing the relationship of rational numbers, integers, and whole numbers.



2. Place a \checkmark in each column that the given number belongs to.

	Rational Number	Integer	Whole Number
-22			
-3.1			
113			
$\frac{5}{8}$			
0.2			

3. Name 3 integers that are NOT whole numbers.

4. Name 3 rational numbers that are NOT positive.

5. Name a rational number that is located between 20.5 and 20.6 on a number line. How do you know it is rational?

NAME _____

DATE _____

SCORE ___/5

6.2A/6.2B Skills and Concepts Homework 2

1. Name the opposite and absolute value of the following numbers.

30 Opposite: _____ Absolute value: _____

$62\frac{3}{4}$ Opposite: _____ Absolute value: _____

-2.3 Opposite: _____ Absolute value: _____

2. Fill in any missing values in the table below. If there are two possible answers for a column, fill in both answers.

Number	Opposite	Absolute Value
-1.5		
	-7	
	92	
		$\frac{5}{3}$
0.09		

3. Name 3 rational numbers (2 positive and 1 negative) that have absolute values larger than 200.

4. Name 3 rational numbers (2 positive and 1 negative) that have opposites that are less than 20.

5. Complete the following statements:

$$|-13| = \underline{\hspace{2cm}}$$

The opposite of 64 is _____

Both _____ and _____ have an absolute value of 15.

NAME _____

DATE _____

SCORE ____/10

Mini-Assessment 6.2A/6.2B

1. Which number does NOT represent a whole number?

- A 3
 - B 20
 - C -10
 - D $\frac{20}{4}$
-

2. Which describes a rational number?

- F Any number found on a number line
 - G All numbers greater than 0
 - H Any number that can be expressed as the ratio of two integers where the denominator is not 0
 - J Any decimal number
-

3. Which statement is true?

- A The opposite of -2 is -2 .
 - B The absolute value of 8 is -8 .
 - C Every positive number has an opposite.
 - D If a number is positive, then its absolute value is negative.
-

4. Which of these numbers will have an opposite that is less than 20?

18 -15 38 1.6 -3.6

- F 18, -15 and 38 only
- G 18, -15 and 1.6 only
- H 18, -15, 1.6 and -3.6 only
- J All of the above

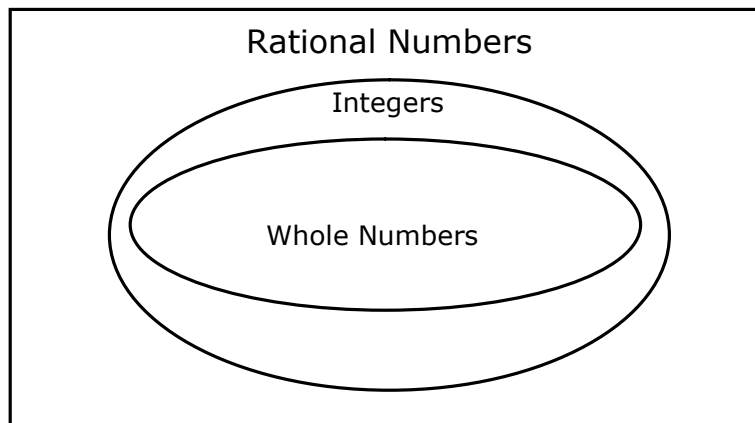
5. Which statement is true?

- A $|-12| = -12$
- B The opposite of 12 is 12.
- C $|12| = -12$
- D $|-12| = |12|$

6. Finn was asked to create a set of numbers so that 2 were integers that were not whole numbers, 2 were rational numbers that were not integers and 2 were rational numbers that were not whole numbers or integers. Which of the following sets would satisfy the criteria for Finn's set?

- F $\left\{11, 6, -3, -4, 1.5, \frac{5}{12}\right\}$
- H $\left\{5, 3, -8, -14, 3.5, \frac{24}{12}\right\}$
- G $\left\{9, 100, 1.11, 12, -6, \frac{20}{3}\right\}$
- J $\left\{20, 12.5, 9, -14, 28, 4\frac{1}{2}\right\}$

7. This Venn diagram shows the relationship of the rational numbers.



Which of the following is an integer but NOT a whole number?

- A 4
- B -8
- C $\frac{13}{2}$
- D 100

8. Which number is a rational number that is NOT a whole number?

F 2

G 12

H $\frac{30}{10}$

J $\frac{17}{5}$

9. Beatrice counted the number of grapes in clusters of grapes. Beatrice listed the number of grapes as she counted. Which best describes the numbers she listed?

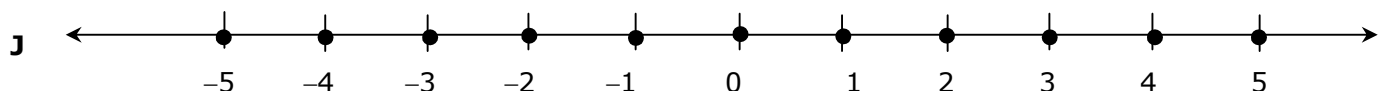
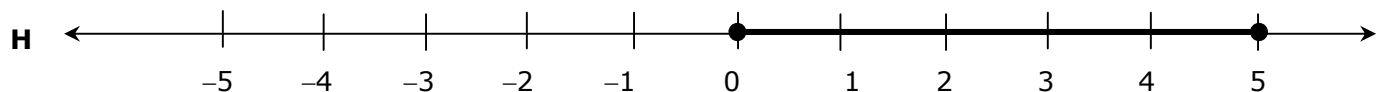
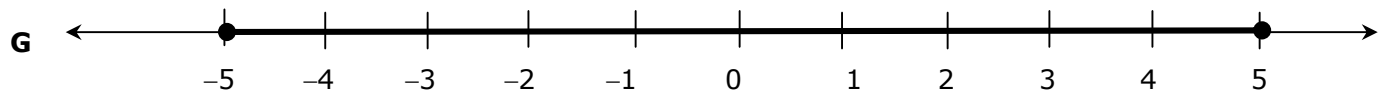
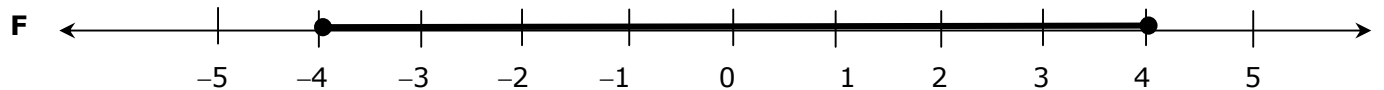
A Whole numbers

B Integers

C Rational numbers

D Not Here

10. Which number line graph best represents the numbers that have an absolute value that is less than or equal to 5?



Six Weeks 1 Review and Assessment

Six Weeks 1 Review

This review can be used in the same manner as a Student Activity from the lessons. Notes can be used to complete the review. You can assign different portions to different partner pairs to be responsible for debriefing for the entire class. Students can complete any answers they did not get before the debriefing. They just need to use a different color to record any additional answers.

It can be completed entirely in class, or it can be taken home to be completed and then debriefed in class prior to the six week assessment.

Six Weeks 1 Review

Lesson 1: 6.2A 6.2B

1. Place a \checkmark in each column that the given number belongs to.

	Rational Number	Integer	Whole Number
-0.5			
-12			
113			
$\frac{5}{8}$			
0.4			

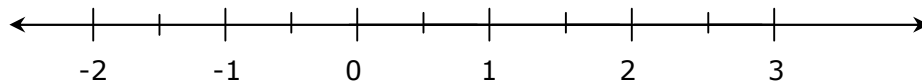
2. Name 5 rational numbers that are integers.

3. What is the absolute value of -20 ? _____

Are there any other numbers that have the same absolute value as -20 ? If so, name the number(s).

Lesson 2: 6.2C

1. Locate and label the following numbers on the number line. $\{2, 2.5, -1, 0.75, -1.75\}$



List the numbers in the list from greatest to least: _____

Lesson 3: 6.4F 6.4E

1. Shade the strip diagrams to represent the indicated percents.

30%

--	--	--	--	--

40%

--	--	--	--	--

2. Represent the following percents as a fraction and as a decimal.

40% fraction: _____ decimal: _____

60% fraction: _____ decimal: _____

75% fraction: _____ decimal: _____

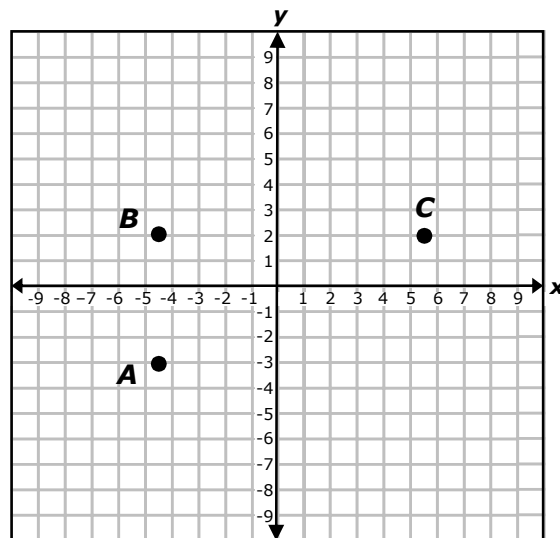
12.5% fraction: _____ decimal: _____

Lesson 4: 6.11A

1. Identify which quadrant the following points will be when plotted on a coordinate grid.

$(-3, 4)$ _____ $(3, -4)$ _____ $(-2, -5)$ _____ $(2, 6)$ _____

2. On the grid below, plot the missing vertex D of rectangle $ABCD$. Identify the ordered pair for the missing point. (,)



Lesson 5: 6.3E 6.3B

1. A piece of rope is 42.6 feet long. Michael cuts the rope into 4 equal pieces. How long is each piece?
2. Circle the true statements below.

$$12 \times \frac{3}{4} < 12$$

$$35 \times \frac{7}{5} < 35$$

$$42 \times \frac{9}{4} > 42$$

Lesson 6: 6.7B 6.7C

1. A coin collection contains nickels and dimes. The collection contains 12 dimes. The number of dimes is 3 more than the number of nickels, n .
Write an expression that represents the number of dimes in terms of n .

2. Model the expression: $2(x + 3) + 2$

Using your model, write another expression that is equivalent to the given expression.

Lesson 7: 6.8A

1. What is the sum of the measures of the three angles of a triangle? _____
Are 53° , 78° and 49° the measures of the angles of a triangle? _____ How do you know?
2. Can the lengths of the sides of a triangle be 2 units, 3 units, and 5 units? _____ How do you know?
3. If you know the lengths of the sides of a triangle are 5 units, 8 units and 10 units, how do you know which angle to place them opposite on a sketch of the triangle?

Lesson 8: 6.10A 6.10B

1. Draw a model for the following equation: $x + 5 = 9$

Solve the equation using your model.

2. Draw a model for the following inequality: $3x < 9$

Solve the inequality using your model.

3. Circle the values below that will satisfy $3x > 30$.

9 10 11 5 12 100 1.5 9.5

Lesson 9: 6.8C 6.8D

1. Write an equation to find the area of a rectangle with side lengths of 4 inches, 8 inches, 4 inches, and 8 inches.
2. A rectangle has an area of 42 square centimeters. The base of the rectangle is 5 centimeters. What is the height of the rectangle?

Lesson 10: 6.14D 6.14E 6.14F

1. Why is it important to have a positive credit rating?
2. What can you do to maintain a positive credit rating?
3. How long does information remain on your credit report?
4. Would you rather have a credit rating of 450 or 750? Explain your choice.

GRADE 6 MATHEMATICS

TEKS/STAAR Six Weeks 1 Assessment

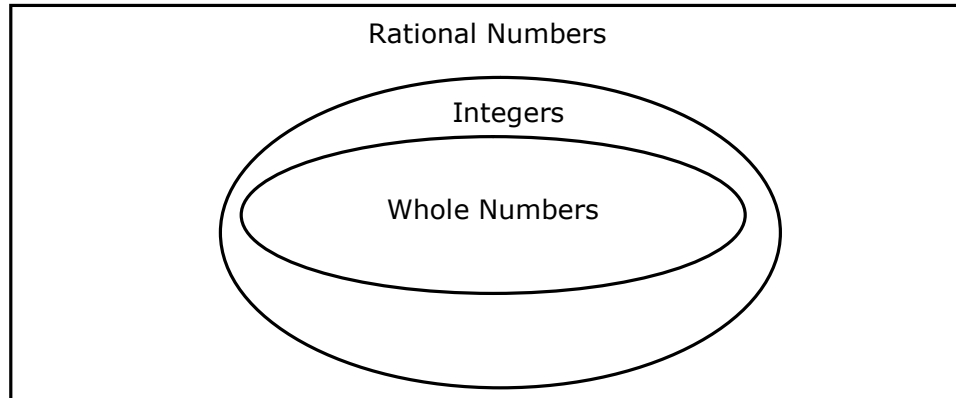
Make 1 copy of the Six Weeks Assessment for each student. Students answer these questions individually. Record class performance on the Class Profile Sheet and individual student performance on the Individual Student Profile Sheet.

Answer Key:	STAAR Category/TEKS
1. C	Category 1/6.2A
2. J	Category 1/6.2B
3. C	Category 2/6.3B
4. G	Category 3/6.11A
5. D	Category 2/6.3E
6. H	Category 1/6.4F
7. B	Category 1/6.4E
8. G	Category 1/6.7B
9. C	Category 1/6.7C
10. H	Category 3/6.8A
11. A	Category 3/6.8C
12. H	Category 3/6.8A
13. 243	Category 3/6.8D
14. H	Category 2/6.10A
15. C	Category 1/6.2C
16. F	Category 2/6.10.B
17. D	Category 4/6.14E
18. J	Category 4/6.14F
19. C	Category 3/6.8A
20. H	Category 3/6.11A

GRADE 6 MATHEMATICS

TEKS/STAAR Six Weeks 1 Assessment

1. This Venn diagram shows the relationship of the subsets of the real number system.



Which of the following sets would belong to the integers?

- A** $\{7, -3, 1.75\}$
- B** $\{1, 3, 0.\bar{3}\}$
- C** $\{-9, 14, 10, 125\}$
- D** $\left\{\frac{16}{8}, 3, 17.6, 29\right\}$

-
2. Which statement is true?

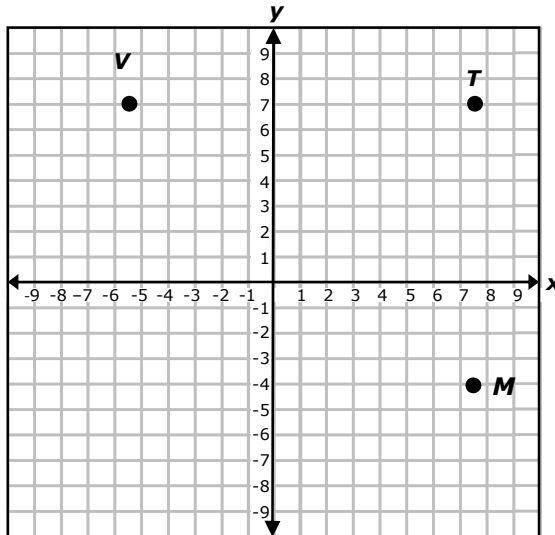
- F** The absolute value of 64 is larger than the absolute value of -64 .
- G** The opposite of 10 is larger than the opposite of -10 .
- H** The sum of any number and its absolute value is 0.
- J** The absolute values of -18 and 18 are equal.

-
3. Which of the following statements is NOT true?

- A** $24 \times \frac{5}{3} > 24$
- B** $48 \times \frac{3}{2} > 48$
- C** $63 \times \frac{3}{7} > 63$
- D** $120 \times \frac{3}{5} < 120$

GRADE 6 MATHEMATICS

4. There are 3 vertices of rectangle $MTVS$ plotted on the coordinate grid below. The fourth vertex of the rectangle will be represented by point S .



Which of the following ordered pairs best represents point S ?

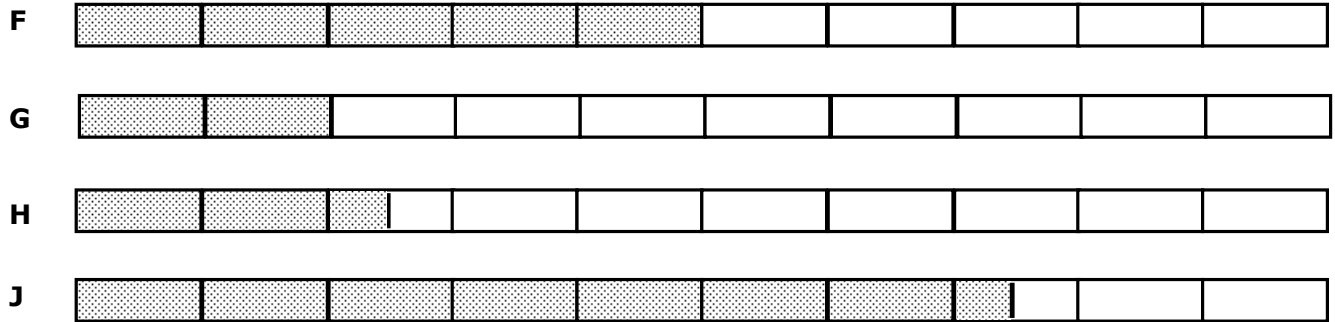
- F** $(-5\frac{1}{2}, 4)$
- G** $(-5\frac{1}{2}, -4)$
- H** $(-4, -5\frac{1}{2})$
- J** $(-5\frac{1}{2}, -5\frac{1}{2})$

5. Jose and his three friends went to dinner. The cost of the meal was \$38 including the tip. If they shared the cost of the meal equally, how much would each of them pay?

- A** \$9.25
- B** \$12.66
- C** \$12.33
- D** \$9.50

GRADE 6 MATHEMATICS

6. Janice exercises every day. She spends 25% of her exercise time swimming. She spends the rest of her exercise time jogging. Which percent bar represents the percent of exercise time Janice spends swimming?



7. It is estimated that 75% of the students at Ryder Middle School are involved in athletics or band. Which decimal represents the number of students involved in athletics or band?

- A** 0.075
B 0.75
C 7.5
D 75.00

8. A rectangle has a perimeter of 80 feet. The length, L , is 4 feet more than the width, w , of the rectangle. Which expression can be used to represent the length in terms of the width?

- F** $w - 4$
G $w + 4$
H $L = w + 4$
J $44 = 2(w + 4) + w$

9. Which pair of expressions are equivalent?

- A** $3x + 5 + 2(6 + 4)$ and $3x + 21$
B $(x + 5) - 2$ and $x + 7$
C $2(x + 5) + 6$ and $2x + 16$
D $(x + 5) - x$ and $2x + 5$

GRADE 6 MATHEMATICS

10. Which of the following sets of angle measures represents the measures of the angles of a triangle?

F $60^\circ, 40^\circ, 90^\circ$

H $70^\circ, 70^\circ, 40^\circ$

G $60^\circ, 58^\circ, 72^\circ$

J $100^\circ, 35^\circ, 55^\circ$

11. A rectangle has side lengths of 9.2 inches, 20 inches, 9.2 inches and 20 inches. Which equation can be used to find the area of the rectangle?

A $A = (20)(9.2)$

C $A = 20 \times 20$

B $A = (9.2)(9.2)$

D $A = \frac{1}{2}(20 + 9.2)$

12. Which of the following could be the lengths of the sides of a triangle?

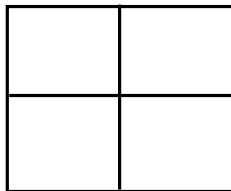
F 5, 9, and 15

G 3, 1, and 2

H 11, 14, and 20

J 7, 4, and 12

13. Marcie is running for class president. She designed some of campaign posters on a 27-inch by 36-inch poster board. She divided the poster board into 4 equal parts as shown below. She wrote her different reasons for why she should be president in each part.



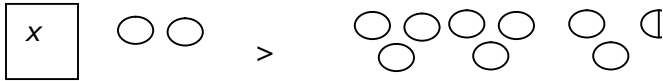
What is the area of one of the smaller rectangles, in square inches?

Record your answer on the grid below. Be sure to use the correct place value.

					.		
+	0	0	0	0		0	0
-	1	1	1	1		1	1
	2	2	2	2		2	2
	3	3	3	3		3	3
	4	4	4	4		4	4
	5	5	5	5		5	5
	6	6	6	6		6	6
	7	7	7	7		7	7
	8	8	8	8		8	8
	9	9	9	9		9	9

GRADE 6 MATHEMATICS

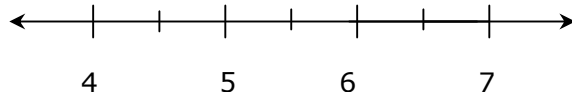
14. The length of one side of a triangle increased by 2 units is more than 8.5 units.



What are the possible values for the length of the side of the triangle?

- F** $x > 5.5$
- G** $x > 4.5$
- H** $x > 6.5$
- J** Not Here

15. Denise marked and labeled 5.3, $6\frac{7}{10}$, 5.8, and $6\frac{1}{2}$ on a number line.



Which number did Denise mark and label closest to 6?

- A** 5.3
- B** $6\frac{7}{10}$
- C** 5.8
- D** $6\frac{1}{2}$

16. Which of the values will NOT make $4x < 45$ true?

- F** 12
- G** 11
- H** 10.5
- J** 3

GRADE 6 MATHEMATICS

17. Darlene made a list of things that she thinks are true about a credit report. Her list included:
- Name, address, social security number, and date of birth will be included
 - Credit accounts including mortgages, credit cards, bank loans, and auto loans
 - Employment records will be included
 - Most information will be retained for 7 years

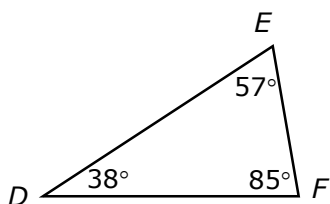
Which of the items Darlene listed are true about a credit report?

- A** b and d only
B b, c, and d only
C a, b, and c only
D All of the above
-

18. Which statement is true?

- F** A person with a credit score of 400 is more likely to be given a bank loan than a person with a credit score of 700.
G A person with a credit score of 720 is less likely to be given a bank loan than a person with a credit score of 450.
H If your credit score is 550 or less, you will never be given a bank loan.
J The longer negative items are on your credit report, the less impact they will have on a bank giving you a loan. The most recent negative items will impact more.
-

19. Look at the triangle shown below.

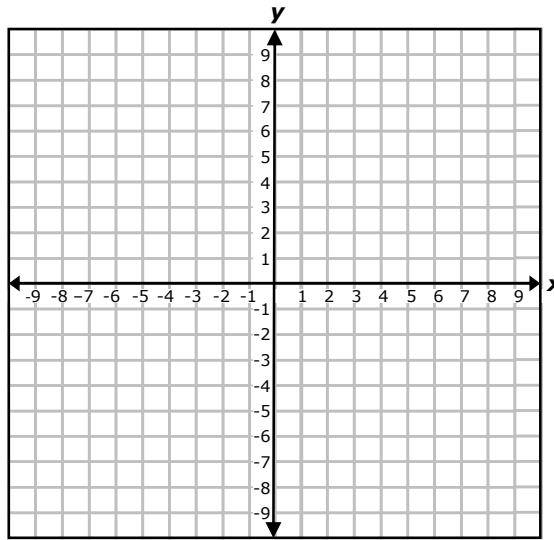


What statement is true about triangle DEF ?

- A** Side DE is longer than the sum of the lengths of sides EF and DF .
B Side DE is the shortest side of the triangle.
C Side DF is the midsize side of the triangle.
D $DE < DF$

GRADE 6 MATHEMATICS

20. A coordinate plane is shown below.



Which ordered pair is located in Quadrant II?

- F** $(1, -2.5)$
- G** $(0, -1.25)$
- H** $(-3.5, 3.5)$
- J** $(-1.5, -2.3)$

Scope and Sequence
Six Weeks 3

TEKSING TOWARD STAAR SCOPE AND SEQUENCE
Grade 6 Mathematics

SIX WEEKS 3

Lesson	TEKS-BASED LESSON	STAAR Category Standard	Spiraled Practice	Student Activity	Problem Solving	Skills and Concepts Homework
Lesson 1 ____ days	6.4A/ compare two rules verbally, numerically, graphically, and symbolically in the form of $y = ax$ or $y = x + a$ in order to differentiate between additive and multiplicative relationships	Category 2 Supporting	SP 41 SP 42	SA 1 SA 2 SA 3	PS 1 PS 2	Homework 1 Homework 2
Lesson 2 ____ days	6.6A/ identify independent and dependent quantities from tables and graphs 6.6B/ write an equation that represents the relationship between independent and dependent quantities from a table	Category 2 Supporting Category 2 Supporting	SP 43 SP 44	SA 1 SA 2 SA 3	PS 1 PS 2	Homework 1 Homework 2
Lesson 3 ____ days	6.5A/ represent mathematical and real-world problems involving ratios and rates using scale factors, tables,...	Category 2 Supporting	SP 45 SP 46	SA 1 SA 2 SA 3	PS 1 PS 2	Homework 1 Homework 2
Lesson 4 ____ days	6.6C/ represent a given situation using verbal descriptions, tables... in the form of $y = kx$ or $y = x + b$	Category 2 Readiness	SP 47 SP 48	SA 1 SA 2	PS 1 PS 2	Homework 1 Homework 2
Lesson 5 ____ days	6.7A/ generate equivalent numerical expressions using order of operations, including whole number exponents and prime factorizations 6.7D/ generate equivalent expressions using the properties of operations: inverse, identity, commutative, associative, and distributive properties 6.7C/ determine if two expressions are equivalent using ... algebraic representations	Category 1 Readiness Category 1 Readiness Category 1 Supporting	SP 49 SP 50 SP 51	SA 1 SA 2 SA 3 SA 4	PS 1 PS 2 PS 3	Homework 1 Homework 2 Homework 3
Lesson 6 ____ days	6.9A/ write one-variable, one-step equations and inequalities to represent constraints or conditions within a problem 6.9B/ represent solutions for one-variable, one-step equations and inequalities on number lines	Category 2 Supporting Category 2 Supporting	SP 52 SP 53	SA 1 SA 2	PS 1 PS 2	Homework 1 Homework 2

TEKSING TOWARD STAAR SCOPE AND SEQUENCE
Grade 6 Mathematics

SIX WEEKS 3

Lesson	TEKS-BASED LESSON	STAAR Category Standard	Spiraled Practice	Student Activity	Problem Solving	Skills and Concepts Homework
Lesson 7 ____ days	<p>6.8B/model area formulas for parallelograms, trapezoids, and ... by decomposing and rearranging parts of these shapes</p> <p>6.8C/write equations that represent problems related to the area of ..., parallelograms, trapezoids, where dimensions are positive rational numbers</p> <p>6.8D/determine solutions for problems that represent problems involving the area of, parallelograms, trapezoids, ... where dimensions are positive rational numbers</p>	<p>Category 3 Supporting</p> <p>Category 3 Supporting</p> <p>Category 3 Readiness</p>	<p>SP 54 SP 55 SP 56</p>	<p>SA 1 SA 2</p>	<p>PS 1 PS 2</p>	<p>Homework 1 Homework 2</p>
Lesson 8 ____ days	<p>6.12A/represent numeric data graphically, including...stem-and-leaf-plots</p> <p>6.12B/use the graphical representation of numeric data to describe the center, spread, and shape of the data distribution</p> <p>6.13A/interpret numeric data summarized in....stem-and-leaf plots</p>	<p>Category 4 Supporting</p> <p>Category 4 Supporting</p> <p>Category 4 Readiness</p>	<p>SP 57 SP 58</p>	<p>SA 1 SA 2 SA 3 SA 4</p>	<p>PS 1 PS 2 PS 3</p>	<p>Homework 1 Homework 2</p>
Lesson 9 ____ days	6.12C /summarize numeric data with numerical summaries, including the mean and median (measures of center) and the range and the interquartile range (IQR)(measures of spread) and use these summaries to describe the center, spread and shape of the data distribution	Category 4 Readiness	SP59	SA 1 SA 2 SA 3	PS 1 PS 2	Homework 1 Homework 2
Lesson 10 ____ days	6.14C /balance a check register that includes deposits, withdrawals, and transfers	Category 4 Supporting	SP 60	SA 1	PS 1	Homework 1 Homework 2
Review Assessment 2 days	<p>Six Weeks 3 Open-Ended Review</p> <p>Six Weeks 3 Assessment</p>					

TEACHER NOTES:

Materials List

Materials List

GRADE 6 MATERIALS LIST - SIX WEEKS 3

SIX WEEKS	LESSON	ITEM	QUANTITY
3	1	3 by 5 blank note cards	3 per pair of students
3	2	Equation cards (copied on cardstock, cut apart, and put in baggie); Table cards (copied on cardstock, cut apart, and put in baggie); Situation cards (copied on cardstock, cut apart, and put in baggie)	1 set per group of 4 1 set per group of 4 1 set per group of 4
3	3	No materials needed	
3	4	No material needed	
3	5	3 by 5 blank note cards	3 per pair of students
3	6	No materials needed	
3	7	Rhombus Ruler Color paper Tape or Glue stick	1 per pair of students 1 per pair of students 1 per pair of students 1 per pair of students
3	8	1 small box of Red Hots [®] or LemonHeads [®] candies (place a sticky dot on each box and number the boxes on the sticky dot) small plastic bowls plastic spoon set of colored markers sheets of poster size grid paper or poster size sheets of butcher paper meter sticks	1 per pair of students 2 per pair of students 1 per pair of students 1 per pair of students 2 per group of 4 students 1 per group of 4 students
2	9	No materials needed	
2	10	Student Height Data Record transparency (or copy to use on projection device) sheet of poster size butcher paper or sheet of poster size grid paper, colored markers, meter/yard stick	1 1 per group of 4 1 per group of 4 1 per group of 4

**Mini-Assessment
Answer Key**

GRADE 6 TEKS-BASED ASSESSMENTS – SIX WEEKS 3
TEKS Correlation and Answer Key for Mini-Assessments

Mini-Assessment And TEKS Assessed	Question Number									
	1	2	3	4	5	6	7	8	9	10
Lesson 1 MA 6.4A	C	J	B	H	D	24	B	F	A	H
Lesson 2 MA 6.6A/6.6B	B 6.6A	F 6.6A	C 6.6A	F 6.6A	B 6.6A	G 6.6B	C 6.6B	F 6.6B	D 6.6B	G 6.6B
Lesson 3 MA 6.5A	D	J	D	F	C	J	36	H	C	G
Lesson 4 MA 6.6C	D	H	C	J	A	J	C	J	A	H
Lesson 5 MA 6.7A/6.7C/6.7D	C 6.7D	G 6.7A	C 6.7A	H 6.7D	D 6.7C	F 6.7D	D 6.7A	G 6.7A	A 6.7C	J 6.7D
Lesson 6 MA 6.9A/6.9B	A 6.9A	G 6.9A	B 6.9A	H 6.9A	B 6.9B	F 6.9B	C 6.9B	G 6.9B	D 6.9B	H 6.9B
Lesson 7 MA 6.8B/6.8C/6.8D	B 6.8B	F 6.8D	C 6.8C	H 6.8C	262.5 6.8B	H 6.8B	25 6.8D	G 6.8D	B 6.8D	H 6.8C
Lesson 8 MA 6.12A/6.12B/6.13A	B 6.12B	F 6.12B	C 6.13A	G 6.13A	C 6.12B	G 6.12B	A 6.12B	G 6.13A	A 6.12A	G 6.12A
Lesson 9 MA 6.12C	D	H	C	J	D	H	A	J	C	13
Lesson 10 MA 6.14C	C	H	D	4496	B	H	D	G	A	H

Six Weeks 3
Lesson 2

6.6A/6.6B Lesson and Assessment

Lesson Focus

For TEKS 6.6A and 6.6B, students should be able to demonstrate an understanding of how to perform operations and represent algebraic relationships. Students are expected to apply mathematical process standards to use multiple representations to describe algebraic relationships.

Students are expected to identify independent and dependent quantities from tables and graphs. Students are also expected to write an equation that represents the relationship between independent and dependent quantities from a table.

Process Standards Incorporated Into Lesson

- 6.1B** Use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution
- 6.1D** Communicate mathematical ideas, reasoning and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate
- 6.1F** Analyze mathematical relationships to connect and communicate mathematical ideas

Materials Needed for Lesson

1. **Per Student:** 1 copy of all pages for student activities for this lesson, Skills and Concepts Homework, and mini-assessment for this lesson
2. **Student Activity 3:** Per group of 4: 1 set of Equation cards (copied on cardstock, cut apart, and put in baggie); 1 set of Table cards (copied on cardstock, cut apart, and put in baggie); 1 set of Situation cards (copied on cardstock, cut apart, and put in baggie)

Math Background-Understanding Dependent and Independent Quantities

Have you ever heard a comment such as “How long it will take me to get there depends upon the traffic?” , or “It will depend upon how much it costs before we can decide if you can have it?”? We deal with some things depending upon other things in our lives every day. In mathematics, we have quantities that depend upon other quantities. They are called **dependent quantities** and the thing they depend upon is called the **independent quantity**.

Some examples of dependent and independent quantities in mathematics are:

1. If you make \$15 an hour, your earnings depend upon the number of hours you work.
2. The perimeter of a square depends upon the length of a side of the square.
3. Renting a bike costs \$5 an hour. The total rental cost depends upon the number of hours the bike is rented.

When looking at a horizontal table of values, the independent quantity is the first quantity listed and the dependent quantity is the second quantity listed. If it is an x and y table, then x is the first row of values and y is the second row of values.

When looking at a vertical table of values, the independent quantity is the first column of values, and the dependent quantity is the second column of values.

Look at the two tables below.

x	3	4	6	9
y	7	6	4	1

x	y
2	4
4	8
6	12
8	16

In both tables, x is the independent and y is the dependent variable. In the first table, y is the difference between x and 10. In the second table, y is twice the value of x .

Example: One number is 3 times another number. Complete the table to show possible values of the two numbers.

First Number	1	2	3	4
Second Number				

According to the information given, the second number is three times the first number. So the second number = $3 \times$ first number.

First Number	1	2	3	4
Second Number	$3 \times 1 = 3$	$3 \times 2 = 6$	$3 \times 3 = 9$	$3 \times 4 = 12$

Example: The length of a rectangle is 5 units more than the width. Complete the table to show possible values of the dimensions of the rectangle.

The length depends upon the width. The length is the dependent value and will be the second row of the table. The width is the independent and will be the first row of the table. The equation that shows the relationship is length = width + 5.

Width	1	2	3	4
Length	$1 + 5 = 6$	$2 + 5 = 7$	$3 + 5 = 8$	$4 + 5 = 9$

When looking at a graph, the independent quantity will be the horizontal axis label, and the dependent quantity will be the vertical axis label.

When using a table to create a graph, remember to write the ordered pairs in the correct order, (independent quantity, dependent quantity), and then plot the point belonging to that ordered pair.

Example: Create a table of values and a graph to represent the following situation.

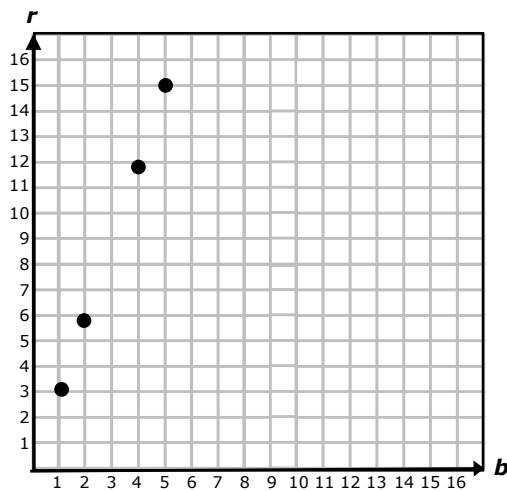
A bag contains red and blue beads. The number of red beads is 3 times the number of blue beads.

The number of red beads depends upon the number of blue beads. The dependent quantity is the number of red beads, r . The number of blue beads, b , will be the independent quantity.

Table:

b	1	2	4	5
r	$3 \times 1 = 3$	$3 \times 2 = 6$	$3 \times 4 = 12$	$3 \times 5 = 15$

Graph: The ordered pairs from the table are $(1, 3)$, $(2, 6)$, $(4, 12)$, and $(5, 15)$.



Writing an Equation that Represents the Relationship between Independent and Dependent Quantities from a Table

The equations we will use will be of the form $y = ax$ or $y = x + a$. To recognize which of these forms of equations have been used to generate a table, remember what we learned in the last lesson. If this is a situation that is represented by an equation of the form $y = ax$, then the ratio of y to x for each entry in the table will have to be the same value. This value will be the "a" in the equation.

Example: Write an equation of the form $y = ax$ or $y = x + a$ that represents the data in the table.

Width (in.) x	1	2	3	4
Length (in.) y	7	14	21	28

Look at the ratio of y to x in each column of the table.

$$\frac{7}{1} = \frac{14}{2} = \frac{21}{3} = \frac{28}{4} = 7$$

The equation that represents the values in the table is $y = 7x$ or length = $7 \times$ width.

If the table of values does not have a common ratio, check to see if there is a common difference between y and x for each set of values. If there is a common difference, then the difference will be the value of "a", and the equation will be $y = x + a$

If there is not a common ratio or a common difference, then we will not be able to find the equation yet. We'll leave that kind for grade 7 and grade 8.

Example: Look at the table of values below. Determine the equation that represents the data in the table.

Width (in.) x	1	2	3	4
Length (in.) y	7	8	9	10

The ratio of y to x is NOT constant. $\frac{7}{1} \neq \frac{8}{2}$.

Check for a common difference. $7 - 1 = 6$ $8 - 2 = 6$ $9 - 3 = 6$ $10 - 4 = 6$

The common difference is 6. The equation that represents the data in the table is $y = x + 6$ or length = width + 6.

Understanding Dependent and Independent Quantities

Have you ever heard a comment such as “How long it will take me to get there depends upon the traffic?”, or “It will depend upon how much it costs before we can decide if you can have it?”? We deal with some things depending upon other things in our lives every day. In mathematics, we have quantities that depend upon other quantities. They are called **dependent quantities** and the thing they depend upon is called the **independent quantity**.

Some examples of dependent and independent quantities in mathematics are:

1. If you make \$15 an hour, your earnings depend upon the number of hours you work.
2. The perimeter of a square depends upon the length of a side of the square.
3. Renting a bike costs \$5 an hour. The total rental cost depends upon the number of hours the bike is rented.

When looking at a horizontal table of values, the independent quantity is the first quantity listed and the dependent quantity is the second quantity listed. If it is an x and y table, then x is the first row of values and y is the second row of values.

When looking at a vertical table of values, the independent quantity is the first column of values, and the dependent quantity is the second column of values.

Look at the two tables below.

x	3	4	6	9
y	7	6	4	1

x	y
2	4
4	8
6	12
8	16

In both tables, x is the independent and y is the dependent variable. In the first table, y is the difference between x and 10. In the second table, y is twice the value of x .

Example: One number is 3 times another number. Complete the table to show possible values of the two numbers.

First Number	1	2	3	4
Second Number				

According to the information given, the second number is three times the first number.
The second number = $3 \times$ first number.

First Number	1	2	3	4
Second Number	$3 \times 1 = 3$	$3 \times 2 = 6$	$3 \times 3 = 9$	$3 \times 4 = 12$

Example: The length of a rectangle is 5 units more than the width. Complete the table to show possible values of the dimensions of the rectangle.

The length depends upon the width. The length is the dependent value and will be the second row of the table. The width is the independent and will be the first row of the table. The equation that shows the relationship is $\text{length} = \text{width} + 5$.

Width	1	2	3	4
Length	$1 + 5 = 6$	$2 + 5 = 7$	$3 + 5 = 8$	$4 + 5 = 9$

When looking at a graph, the independent quantity will be the horizontal axis label, and the dependent quantity will be the vertical axis label.

When using a table to create a graph, remember to write the ordered pairs in the correct order, (independent quantity, dependent quantity), and then plot the point belonging to that ordered pair.

Example: Create a table of values and a graph to represent the following situation.

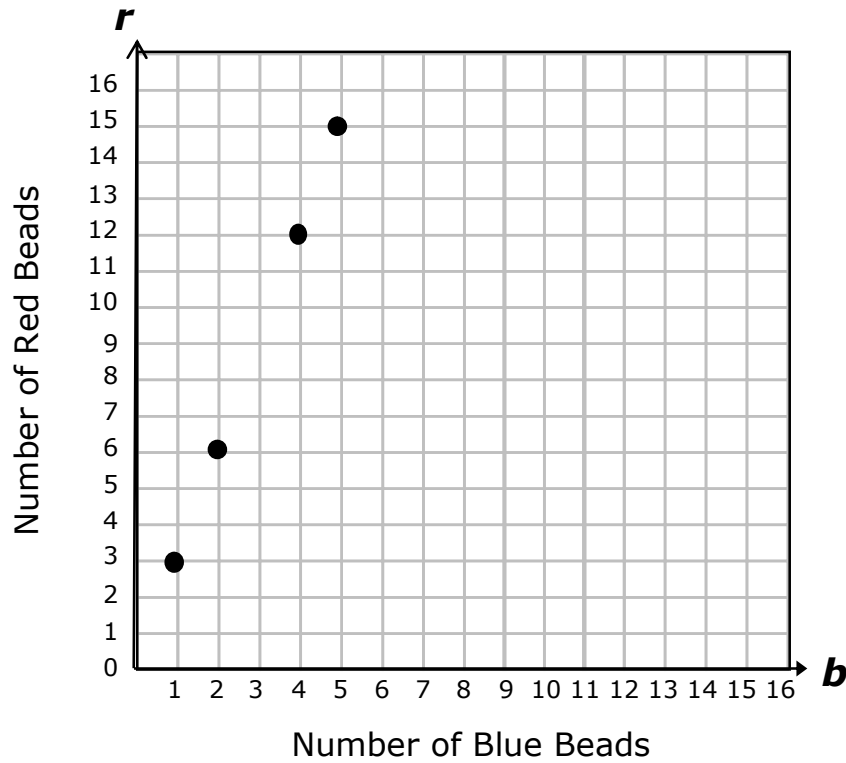
A bag contains red and blue beads. The number of red beads is 3 times the number of blue beads.

The number of red beads depends upon the number of blue beads. The dependent quantity is the number of red beads, r . The number of blue beads, b , will be the independent quantity.

Table:

b	1	2	4	5
r	$3 \times 1 = 3$	$3 \times 2 = 6$	$3 \times 4 = 12$	$3 \times 5 = 15$

Graph: The ordered pairs from the table are $(1, 3)$, $(2, 6)$, $(4, 12)$, and $(5, 15)$.



Problem-Solving 1

Determine the dependent and independent quantities in the tables or graph below.

Hours	4	5	6	10
Earnings \$	60	75	90	150

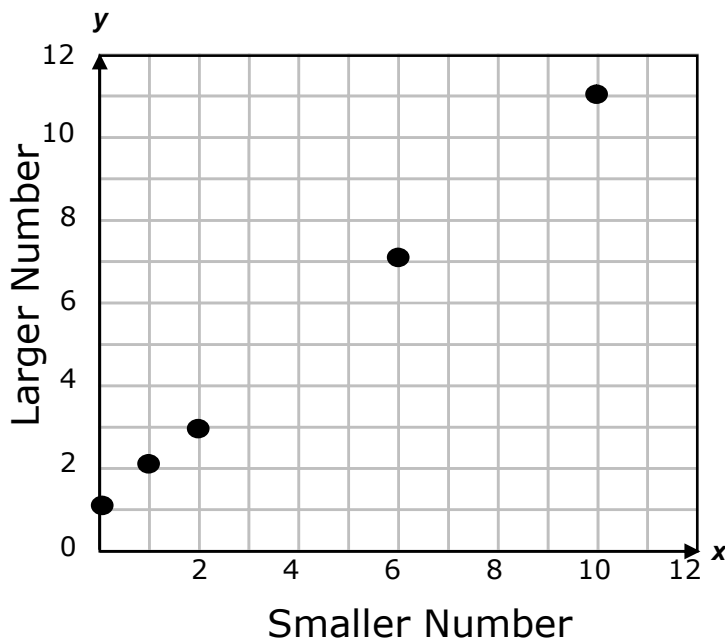
Independent Quantity: _____

Dependent Quantity: _____

Side of Square (in.)	4	5	6	10
Perimeter (in.)	16	20	24	40

Independent Quantity: _____

Dependent Quantity: _____



Independent quantity:

Dependent quantity:

Student Activity 1

Work with your partner to answer the following questions.

Problem 1: If you look at a table, the _____ quantity will be located on the first row or column. The _____ quantity will be located on the second row or column.

On a graph, the _____ quantity will be located on the horizontal axis, and the _____ quantity will be located on the vertical axis.

Problem 2: Complete the table of values. Identify the independent and dependent quantities in the table below.

A stack of pennies contains 10 pennies.

Number of Stacks of Pennies	3	6		15
Number of Pennies			80	

- The independent quantity is _____.
- The dependent quantity is _____.

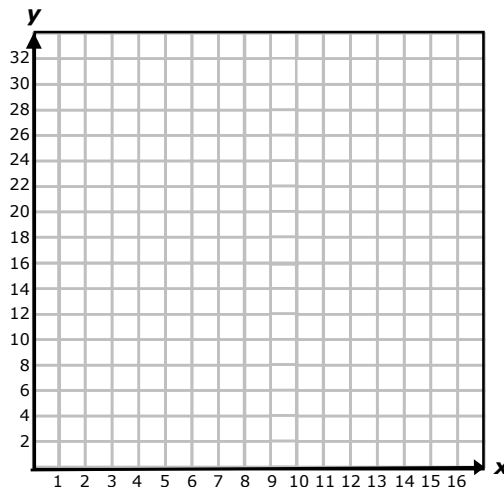
Problem 3: Mary has \$10 more than Joan.
Complete the table below.

Joan's Money	\$4	\$6	\$12	\$17.50	\$21
Mary's Money					

- The independent quantity in the table is _____.
- The dependent quantity in the table is _____.

List the ordered pairs from the table. (,) (,) (,) (,) (,)

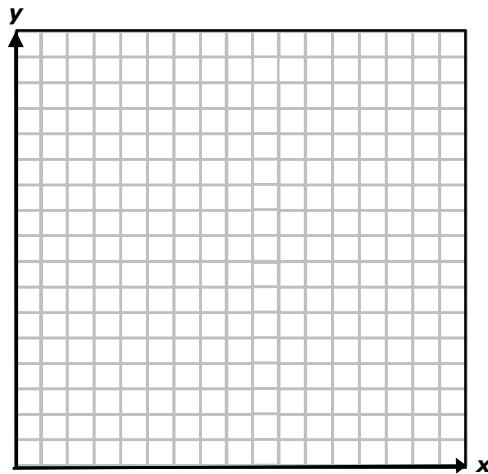
Label the axes and plot the points for this situation.



Problem 4: The cost of renting a movie is \$3 per movie.

- What is the independent quantity in this situation? _____
- What is the dependent quantity in this situation? _____
- Create a table of values to represent a various number of movies rented. Label the rows appropriately for the table.

- Write the ordered pairs from the table. (,) (,) (,) (,)
- Create a graph of your data using the grid below. Label the axes appropriately and chose a scale to use.



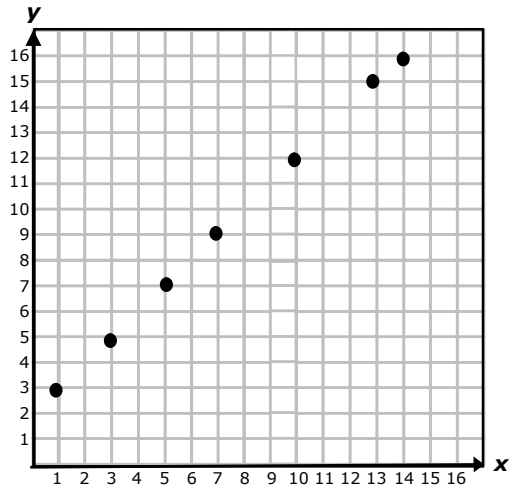
Problem 5: Look at the table below. Describe a possible situation the table could represent. Describe the independent and dependent variables in the situation.

<i>Independent variable, x</i>	1	2	3	4
<i>Dependent variable, y</i>	4	8	12	16

Problem 6: Look at the table below. Describe a possible situation the table could represent. Describe the independent and dependent variables in the situation.

<i>Independent variable, x</i>	3	5	6	8
<i>Dependent variable, y</i>	9	11	12	14

Problem 7: The graph below shows a relationship between two variables. Describe a possible situation the graph could represent. Describe the dependent and independent quantities.

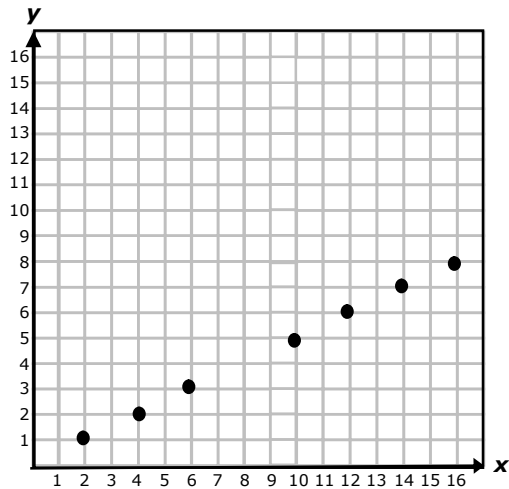


Situation:

Independent variable:

Dependent variable:

Problem 8: The graph below shows a relationship between two variables. Describe a possible situation the graph could represent. Describe the dependent and independent quantities.



Situation:

Independent variable:

Dependent variable:

Writing an Equation to Represent the Relationship between Independent and Dependent Quantities in a Table

The equations we will use will be of the form $y = ax$ or $y = x + a$. To recognize which of these forms of equations have been used to generate a table, remember what we learned in the last lesson. If this is a situation that is represented by an equation of the form $y = ax$, then the ratio of y to x for each entry in the table will have to be the same value. This value will be the “ a ” in the equation.

Example: Write an equation of the form $y = ax$ or $y = x + a$ that represents the data in the table.

Width (in.) x	1	2	3	4
Length (in.) y	7	14	21	28

Look at the ratio of y to x in each column of the table.

$$\frac{7}{1} = \frac{14}{2} = \frac{21}{3} = \frac{28}{4} = 7$$

The equation that represents the values in the table is $y = 7x$ or length = $7 \times$ width.

If the table of values does not have a common ratio, check to see if there is a common difference between y and x for each set of values. If there is a common difference, then the difference will be the value of “ a ”, and the equation will be $y = x + a$

If there is not a common ratio or a common difference, then we will not be able to find the equation yet. We’ll leave that kind for grade 7 and grade 8.

Example: Look at the table of values below. Determine the equation that represents the data in the table.

Width (in.) x	1	2	3	4
Length (in.) y	7	8	9	10

The ratio of y to x is NOT constant. $\frac{7}{1} \neq \frac{8}{2}$.

Check for a common difference.

$$7 - 1 = 6 \quad 8 - 2 = 6 \quad 9 - 3 = 6 \quad 10 - 4 = 6$$

The common difference is 6. The equation that represents the data in the table is $y = x + 6$ or length = width + 6.

Problem-Solving 2

For each table, write an equation that shows the relationship between y and x .

x	1	2	3	4
y	2	4	6	8

Equation: _____

x	4	5	20	28
y	12	13	28	36

Equation: _____

x	8	9	20	28
y	2	3	14	22

Equation: _____

Student Activity 2

Work with your partner to answer the following problems.

Problem 1: In your own words, explain how to decide if the equation that represents a table of values will be of the form $y = ax$.

Problem 2: In your own words, explain how to decide if the equation that represents a table of values will be of the form $y = x + a$.

Problem 3: If you subtract x from y for the values in a table and you get a constant difference of -3 , what will be the equation?

Problem 4: If you find the common ratio of y to x in a table of values is $3:4$, what will be the equation?

Problem 5: Give the equation that represents the values in the table.

Number of Games Purchased, x	1	2	3	4	5
Cost of the Games \$, y	12	24	36	48	60

Equation: _____

Problem 6:

Give the equation that represents the values in the table.

First Number, x	4	5	6	8	15
Second Number, y	-1	0	1	3	10

Equation: _____

Problem 7:

Give the equation that represents the values in the table.

First Number, x	4	5	6	10	13
Second Number, y	2	2.5	3	5	6.5

Equation: _____

Problem 8: Fill in the table so that it will represent $y = x - 2$

First Number, x	0	1	4	8	23	30
Second Number, y						

Problem 9: Fill in the table so that it will represent $y = 1.5x$

First Number, x	0	1	4	10	22	30
Second Number, y						

Problem 10: Fill in the table so that it will represent $y = \frac{2x}{3}$

First Number, x	0	1	3	9	33	36
Second Number, y						

Problem 11: James is playing a game where he receives the same number of points per win. He won 12 times and got 48 points. He won 15 times and got 60 points. Write an equation that represents the relationship between x , the number of times he won, and y , the number of points he earned.

- Make a table of values:

x		
y		

- Check for a common ratio or a common difference.
- Write the equation.

Teacher Notes for Student Activity 3

MATERIALS: Per Group of 4: 1 set of Equation cards; 1 set of Table cards; 1 set of Situation cards

PROCEDURE:

- Distribute materials to pairs of students.
- Students complete Student Activity 3 in groups of 4. Number the students 1, 2, 3, and 4. Students 1 and 2 will work together and students 3 and 4 will work together. Place the set of equations face down on the desk top. Each pair of students takes a set of solution sets.

Before students begin working, ask the following questions:

- How can you model using a table?
- How do they match a table with a situation?
- How do you determine what variable is the independent variable?
- How do you determine what variable is the dependent variable?

During Student Activity 3, roam the room and listen for the following:

- Do the students understand how to determine if the equation is of the form $y = ax$ or $y = x + a$?
- Do the students understand how to determine the dependent variable using a table?

During Student Activity 3, roam the room and look for the following:

- Are the students setting up common ratios or common differences for the table values?
- Do the students translate a situation into an equation?

Answers to these questions can be used to support decisions related to further whole class instruction or group and individual student instruction during tutorial settings.

Student Activity 3

MATERIALS: Per Group of 4: 1 set of equation cards; 1 set of table cards; 1 set of situation cards.

PROBLEMS:

- How can you determine the equation that represents the data in a table of values?

PROCEDURE:

- You will work in groups of 4 for Student Activity 3. Your teacher will number you 1, 2, 3, or 4. 1 and 2 will work together and 3 and 4 will work together.
- The set of equations are to be placed face down on the desk top. The set of tables and the set of situations are left face up on the table.

Part 1:

Round 1: Students 1 and 2 randomly select an equation card. They turn the card over. They will look for the situation card that matches the equation. Students 3 and 4 will look for the table of values that matches the equation card. When both cards have been selected, they show the other pair their card. Together the 4 students decide if all three cards represent each other. If they don't agree, they discuss until they come to an agreement. Place the three cards to the side away from the other cards. Fill in the chart below for the equation number selected.

Round 2: Students 3 and 4 randomly select an equation card. They turn the card over. They will look for the situation card that matches the equation. Students 1 and 2 will look for the table of values that matches the equation card. When both cards have been selected, they show the other pair their card. Together the 4 students decide if all three cards represent each other. If they don't agree, they discuss until they come to an agreement. Place the three cards to the side away from the other cards. Fill in the chart below for the equation number selected.

Round 3: Repeat the steps in Round 1.

Round 4: Repeat the steps in Round 2.

Round 5: Repeat the steps in Round 1.

Round 6: Repeat the steps in Round 2.

Equation/Situation/ Table Chart

Equation Card #	Independent Variable	Dependent Variable	Situation Card #	Table Card #
1				
2				
3				
4				
5				
6				

Part 2:

1. Which table cards had a common ratio?

Which table cards had a common difference?

2. Which type card did you prefer to use to match the equation? Why?

3. Were there any equations that all 4 of you had to discuss because you didn't agree with the choice of matching cards?

If so, was the discussion able to convince all 4 of you of the correct choice?

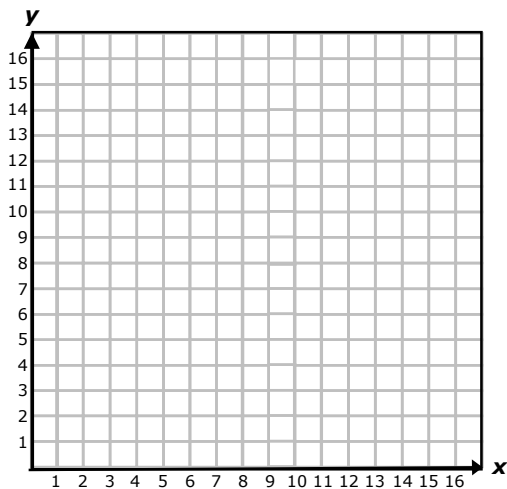
4. Write the equation from Equation card #1. _____

How did you decide which quantity was the dependent quantity?

5. List another set of values that would belong to Table #2.

List another set of values that would belong to Table #4.

6. Draw a graph for the equation on Equation card #3. Plot the points from the table and any other appropriate ones you want.



Situation Cards

1 Janis is three years younger than her brother Billy.	2 Each carton of eggs contains twelve eggs.
3 The length is 4 feet longer than the width of a rectangle.	4 Don has one-half as much money as his sister.
5 A bag contains 3 times as many white marbles as black marbles.	6 A larger number is 12 more than a smaller number.

Equation Cards

1 $y = x + 12$	2 $y = 3x$
3 $y = x + 4$	4 $y = x - 3$
5 $y = \frac{1}{2}x$	6 $y = 12x$

Table Cards

1

x	2	4	5
y	24	48	60

2

x	2	4	5
y	6	8	9

3

x	4	10	18
y	2	5	9

4

x	4	10	18
y	16	22	30

5

x	2	4	5
y	6	12	15

6

x	4	10	18
y	1	7	15

NAME _____

DATE _____

SCORE ___/5

6.6A/6.6B Skills and Concepts Homework 1

1. Explain a dependent variable.

Give an example of a situation and identify the dependent variable.

2. Look at table below.

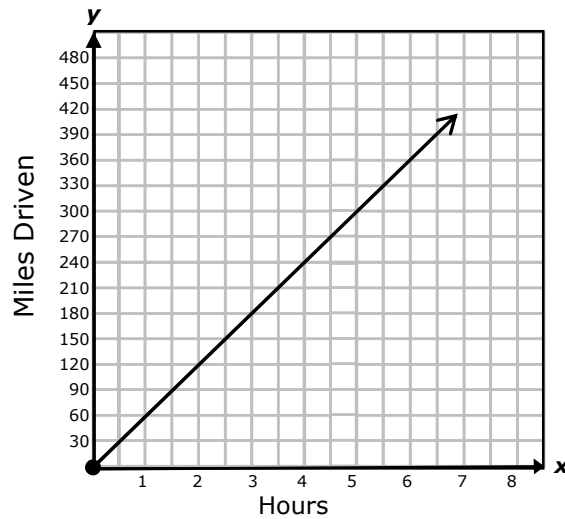
Number of Red Beads	3	5	7	9
Number of Blue Beads	8	10	12	14

What is the independent variable? _____

What is the dependent variable? _____

3. Look at the graph below. Identify the independent variable. _____

Identify the dependent variable. _____



4. Identify the independent variable in each table.

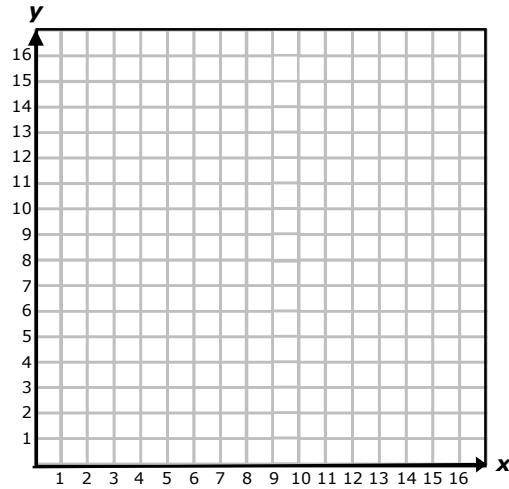
Hours	2	4	8	10
Earnings	\$20	\$40	\$80	\$110

Beth's age	2	4	8	10
Joes' age	12	14	18	20

5. Create a graph to represent the following situation:

Mary and Brandy walked to the mall from their homes. Mary walked 8 more blocks than her friend Brandy walked.

Label the axes appropriately.



The dependent variable is _____ and is labeled on the _____ axis.

NAME _____

DATE _____

SCORE ___/5

6.6A/6.6B Skills and Concepts Homework 2

Write an equation to represent the data in the tables below. Show any work you use to determine your answer.

1.

Width of a Rectangle, x	2	9	11	15	23	28	32
Length of a Rectangle, y	11	18	22	26	34	39	43

Equation: _____

2.

Number of Bags of Cookies, x	2	3	5	8	10	11	12
Number of Cookies, y	48	72	120	192	240	264	288

Equation: _____

3.

Number of Tickets, x	3	4	6	7	8	10	11
Cost \$, y	18	24	36	42	48	60	66

Equation: _____

4.

Base of a Triangle (<i>in.</i>), x	22	26	30	32	40	44	50
Height of a Triangle (<i>in.</i>), y	18	22	26	28	36	40	46

Equation: _____

5.

Billy's age, x	2	3	5	7	9	11	12
Brad's age, y	5	6	8	10	12	14	15

Equation: _____

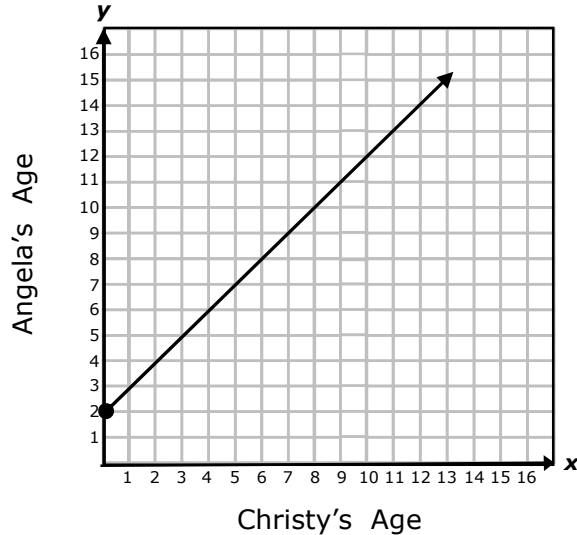
NAME _____

DATE _____

SCORE ____/10

Mini-Assessment 6.6A/6.6B

1. Look at the graph below.



Which statement is true about the graph?

- A** Christy's age depends upon Angela's age.
- B** Angela's age depends upon Christy's age.
- C** Christy's age is the dependent variable.
- D** Angela's age is the independent variable.

2. Jimmy owns 5 video games. He buys a new video game each month. The table below shows the number of video games he owns after various months.

Number of Months	0	1	2	4
Number of Video games Owned	5	6	7	9

Which statement is true based on the information in the table?

- F** The number of video games Jimmy owns depends upon the number of months.
- G** The number of months depends upon the number of video games Jimmy owns.
- H** The number of video games Jimmy owns is the independent variable.
- J** The amount of money he spent depends upon the number of video games he bought.

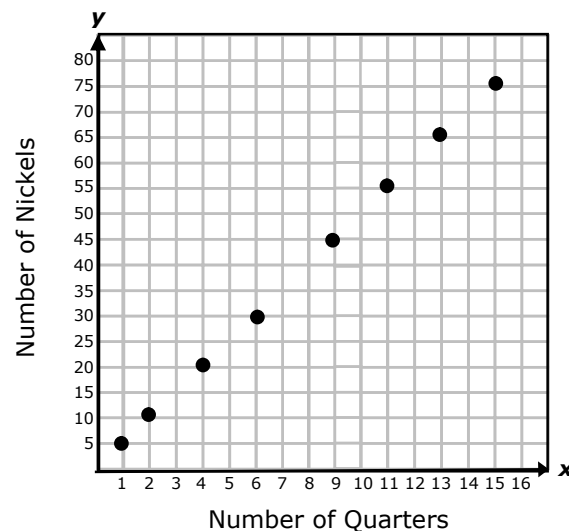
3. For William's birthday party, his mother put balloons on each table. The relationship between the number of balloons and the number of tables is shown below.

Number of Tables	1	2	3
Number of Balloons	3	6	9

Which statement is true about this relationship?

- A** The number of balloons on each table is the independent variable.
- B** The number of tables used is the dependent variable.
- C** The number of balloons used is the dependent variable.
- D** The number of balloons used is the independent variable.

4. The graph below shows the relationship between the number of nickels and the number of quarters.



What is the independent quantity in this relationship?

- F** The number of quarters
- G** The number of nickels
- H** The ratio of nickels to quarters
- J** The number of nickels in each quarter

5. The length of a rectangle is 3 less than the width of the rectangle. The table below shows the dimensions of a rectangle with this relationship.

Width	4	5	8	11	13
Length	1	2	5	8	10

What is the independent quantity in this relationship?

- A** length of the rectangle **C** perimeter of the rectangle
B width of the rectangle **D** area of the rectangle

6. The distance in miles the Greer family traveled is shown in the table below.

Hours, h	2	3	5	6	7
Distance, d	110	165	275	330	385

Which statement is true about the data in the table?

- F** The number of hours is the dependent variable and $d = 55h$.
G The distance the family traveled is the dependent variable and $d = 55h$.
H The average rate they traveled is the dependent variable and $d = 55h$.
J The distance the family traveled is the dependent variable and $d = \frac{h}{55}$.

7. The table below shows the relationship between x and y .

x	3	6	8
y	18	21	23

Which equation represents the relationship between x and y ?

- A** $y = 6x$
B $y = \frac{x}{6}$
C $y = x + 15$
D $y = x - 15$

8. The table below shows the relationship between x and y .

x	4	6	8
y	20	30	40

Which equation represents the relationship between x and y ?

- F** $y = 5x$
G $y = \frac{x}{5}$
H $y = x + 16$
J $y = 16x$

9. Look at the tables of values below.

Width of Rectangle	4	8	10	11
Length of Rectangle	10	14	16	17

Which equation represents the data in the table?

- A** length = width + 5
B width = length + 5
C length = $2.5 \times$ width
D length = width + 6

10. The relationship between the number of edges of a pyramid and the number of edges on one base of the pyramid is shown in the table.

Number of Edges on a Base, e	3	4	5	6	7
Total Number of Edges, E	6	8	10	12	14

Which equation represents the relationship between the edges on a base, e , and the number of edges, E , of the pyramid?

- F** $E = e + 3$
G $E = 2e$
H $E = \frac{e}{2}$
J $E = e - 3$

**Six Weeks 3
Review and
Assessment**

Six Weeks 3 Review

This review can be used in the same manner as a Student Activity from the lessons. Notes can be used to complete the review. You can assign different portions to different partner pairs to be responsible for debriefing for the entire class. Students can complete any answers they did not get before the debriefing. They just need to use a different color to record any additional answers.

It can be completed entirely in class, or it can be taken home to be completed and then debriefed in class prior to the six week assessment.

Six Weeks 3 Review

Lesson 1: 6.4A

1. What will be different between the graphs of $y = x + 3$ and $y = 3x$?
2. Complete the table for the missing values using the multiplicative relationship: $y = 4x$

x	3		6	
y		20		28

3. Does the table below represent an additive relationship or a multiplicative relationship?

x	3	5	6	25
y	6	8	9	28

The table represents a(n) _____ relationship because

_____.

Lesson 2: 6.6A/6.6B

1. What is the independent quantity in the table below?

Side length, in., x	2	5	6	11
Perimeter of Square in., y	8	20	24	44

2. Write the equation that shows the relationship between x and y in the table above.

Lesson 3: 6.5A

1. A map is drawn with a centimeter representing 30 miles. If the distance between two towns is 4.5 centimeters on the map, what is the actual distance between the two towns?

2. A triangle has side lengths of 8 centimeters, 9 centimeters, and 14 centimeters. The triangle is to be enlarged by a scale factor of 2.5. What will be the length of the longest side in the enlarged triangle?
3. Based on the table below, what is the constant rate in miles per hour?

Hours, h	2	5	6
Miles Driven, m	110	275	330

Lesson 4: 6.6C

1. Write an equation and a verbal description for a situation that is represented in the table below.

Width of a Rectangle, x	2	4	5	6
Length of a Rectangle, y	8	10	11	12

Equation: _____

Verbal Description: _____

2. For William's birthday party, his mother put balloons on each table. The relationship between the number of balloons and the number of tables decorated is shown in the table below.

Number of Tables	2	4	5
Number of Balloons	8	16	20

Describe the relationship between the number of balloons used and the number of tables decorated.

Lesson 5: 6.7A/6.7C/6.7D

1. In your own words, explain the order of operations rule.
2. Simplify $3 + 5 \times 6 \div 2 + 2^3$
3. What is a prime number?
4. Circle the prime numbers in the list below.

5 6 9 11 2 3 21 23 25 29 7 17 19

5. Write 100 in prime factorization.
6. $2^2 \times 3 \times 5^2 \times 7$ is the prime factorization for _____.
7. Describe the Commutative Property of Addition.
8. What is the identity number of addition? _____ What is the Identity Property of Addition?
9. What is another name for multiplicative inverse? _____
10. Write an expression that is equivalent to $3(x + 6)$ using the:
Distributive Property. _____
Commutative Property of Addition _____

Lesson 6: 6.9A/6.9B

Write an equation or inequality to represent the following situations.

1. The base of a rectangle is 8 units more than the height of the rectangle. The base is 12 units.
2. There are 10 dimes in a collection. The number of dimes is 5 more than the number of nickels in the collection.
3. In a bag, the number of blue tiles is 8 more than the number of red tiles. There are more than 20 blue tiles in the bag.

Lesson 7: 6.8B/6.8C/6.8D

1. A parallelogram has a base of 20 units and a height of 8 units. What is the area of the parallelogram?
2. A trapezoid has bases of 5 inches and 9 inches. The height of the trapezoid is 6 inches. What is the area of the trapezoid?
3. A parallelogram has an area of 50 square inches. The height of the parallelogram is 12 inches. Write an equation that can be used to find the base of the parallelogram.

4. A trapezoid has an area of 300 square units. The bases of the trapezoid are 18 inches and 12 inches. What is the height of the trapezoid?

Lesson 8: 6.12A/6.12B/6.13A

1. Represent the following data in a stem-and-leaf plot.

23, 26, 32, 21, 34, 42, 48, 32, 33, 27, 28, 27, 29, 20, 23

2. What is the center, spread, and shape of the data in the stem-and-leaf plot above?
3. About what percent of the data points in the stem-and-leaf plot were less than 30?
4. Write another question that can be answered using the stem-and-leaf plot.

Lesson 9: 6.12C

Using the data set 6, 8, 5, 11, 12, 8, 6, answer the following questions.

1. What is the range of the data set?
2. What is the median of the data set?
3. What is the mean of the data set?
4. What is the lower quartile?
5. What is the upper quartile?
6. What is the IQR of the data set?

Lesson 10: 6.12C

1. How do you balance a check register?
2. Decide if the following amounts would be added or subtracted from the current balance of a check register. Write Add or Subtract in the blank.

_____ Check #21 written for \$42 to gas station

_____ Transferred \$100 from savings account into checking account

_____ Used debit card at ATM to withdraw \$50 cash

_____ Automatic deposit of \$2,512 from employer

_____ Automatic payment of \$343 to Ford Motor Company

3. Justin has a checking account balance of \$2,100. He writes checks for \$53, \$25.75, and \$48. What will be his checking account balance be after writing the checks?

GRADE 6 MATHEMATICS

Six Weeks 3 Assessment

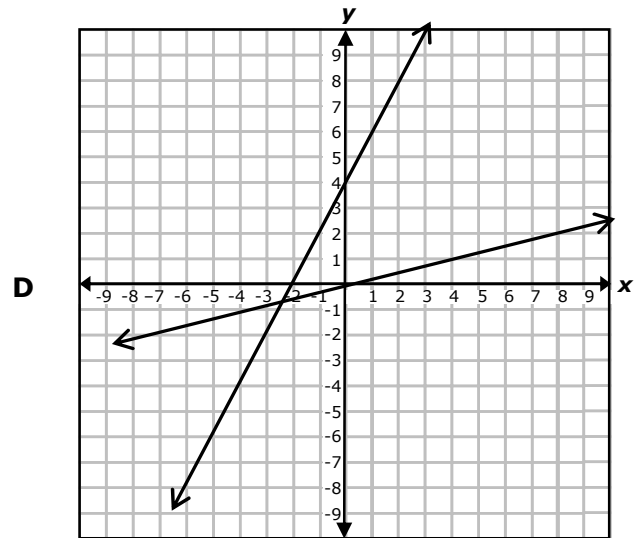
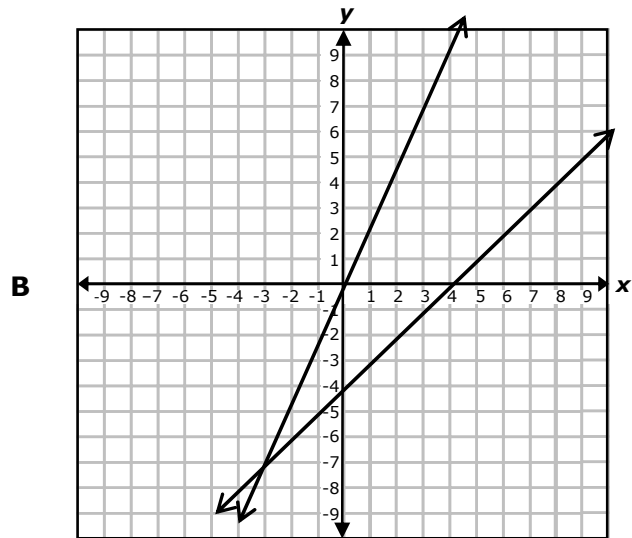
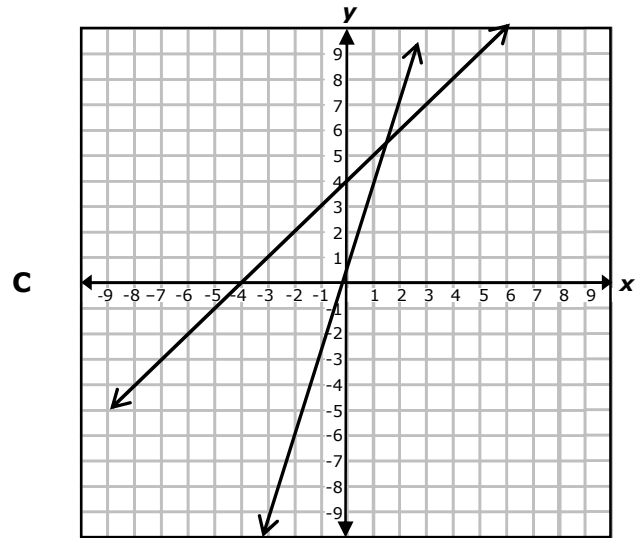
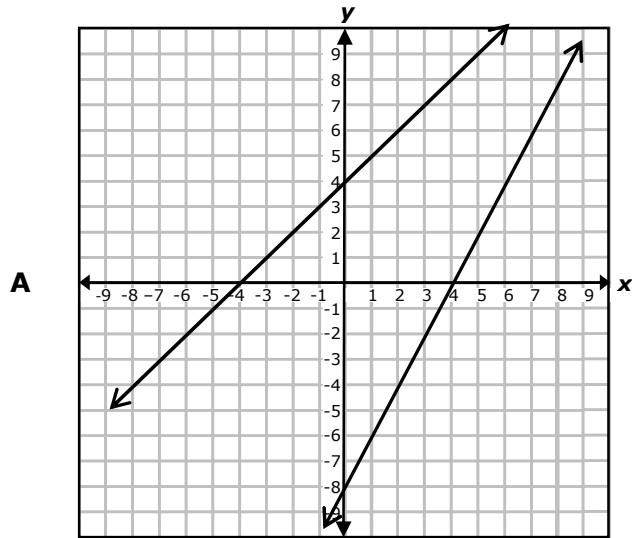
Make 1 copy of the six weeks assessment for each student. Students answer these questions individually. Record class performance on the Class Profile Sheet and individual student performance on the Individual Student Profile Sheet.

Answer Key:	STAAR Category/TEKS
1. C	Category 2/6.4A
2. 50	Category 2/6.5A
3. D	Category 2/6.6C
4. J	Category 1/6.7A
5. A	Category 2/6.9A
6. J	Category 1/6.7C
7. C	Category 2/6.6B
8. F	Category 2/6.9B
9. B	Category 3/6.8C
10. F	Category 4/6.12A
11. A	Category 4/6.12B
12. H	Category 4/6.12C
13. 300	Category 3/6.8D
14. J	Category 4/6.14C
15. B	Category 2/6.6A
16. H	Category 1/6.7A
17. C	Category 2/6.5A
18. H	Category 1/6.7D
19. B	Category 2/6.9A
20. G	Category 2/6.9B

GRADE 6 MATHEMATICS

TEKS/STAAR Six Weeks 3 Assessment

1. Which graphs on the coordinate grids below show only points that belong to $y = 4x$ or $y = x + 4$?



GRADE 6 MATHEMATICS

2. If 1 inch on a map represents 20 miles, what is the mileage represented by 2.5 inches?

Record your answer on the grid below. Be sure to use the correct place value.

					.		
+	0	0	0	0		0	0
-	1	1	1	1		1	1
	2	2	2	2		2	2
	3	3	3	3		3	3
	4	4	4	4		4	4
	5	5	5	5		5	5
	6	6	6	6		6	6
	7	7	7	7		7	7
	8	8	8	8		8	8
	9	9	9	9		9	9

3. The table below shows the relationship between x , the number of hours Richard worked, and the amount of his earnings, y , for the hours worked.

Hours, x	Earnings, y
2	\$19
3	\$28.50
6	\$57
10	\$95

Which equation represents the relationship between the hours Richard worked, x , and his earnings for hours worked, y ?

- A** $y = x + 17$
- B** $y = 19x$
- C** $y = x + 9.5$
- D** $y = 9.5x$

4. Which expression represents the prime factorization of 240?

- F** $2^3 \cdot 3 \cdot 5$
- G** $2 \cdot 3 \cdot 3 \cdot 10$
- H** $2^3 \cdot 3 \cdot 10$
- J** $2^4 \cdot 3 \cdot 5$

GRADE 6 MATHEMATICS

5. Two angles of a triangle have measures that total 110 degrees. Which equation can be used to find m , the measure of the third angle?

- A $m + 110 = 180$
- B $m - 110 = 180$
- C $110m = 180$
- D $110 - m = 180$

6. Which expression is NOT equivalent to $(2x + 8 \times 2) + 6 \times 3$?

- F $(2x + 8 \times 2) + 18$
- G $(2x + 16) + 6 \times 3$
- H $(2x + 2 \times 8) + 18$
- J $(10x + 2) + 18$

7. The table below shows the relationship between tablespoons and teaspoons.

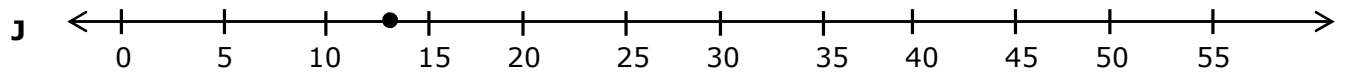
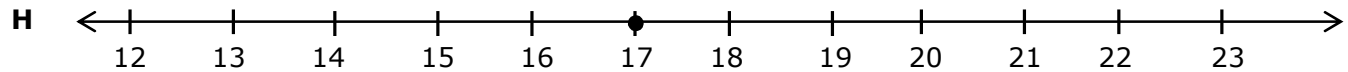
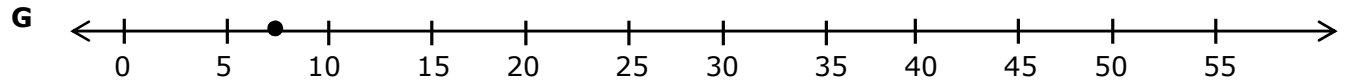
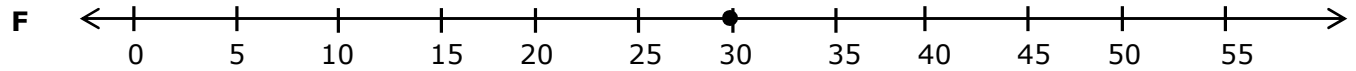
Tablespoons, x	Teaspoons, y
0.5	1.5
1	3
1.5	4.5
2	6

Which equation represents the relationship between number of tablespoons, x , and the number of teaspoons, y ?

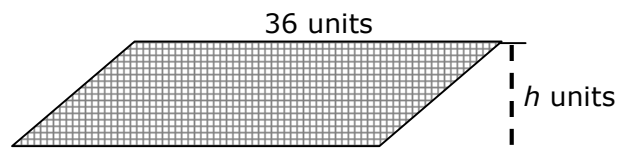
- A $y = 1 + x$
- B $y = 6 \cdot x$
- C $y = 3 \cdot x$
- D $y = x \div 3$

GRADE 6 MATHEMATICS

8. If n is divided by 2 the quotient is 15. Which number line graph best represents the value of n ?



9. The area of a parallelogram is 240 square units. The base of the parallelogram is 36 units.



Which equation can be used to find the height of the parallelogram?

A $36 + h = 240$

B $36h = 240$

C $18h = 240$

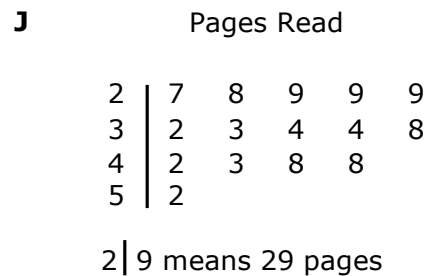
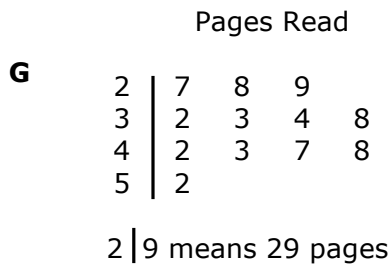
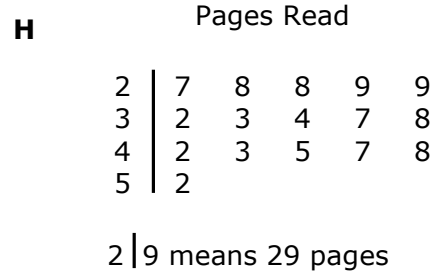
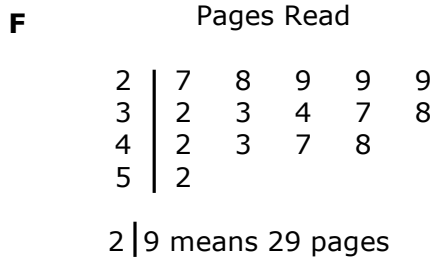
D $\frac{h}{36} = 240$

GRADE 6 MATHEMATICS

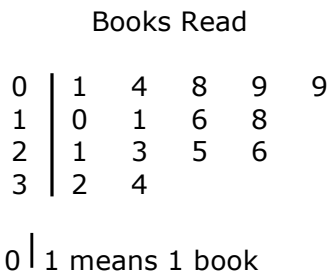
10. Look at the data set. The data represents the number of pages 15 students read during reading time at school.

29, 34, 43, 29, 27, 47, 32, 29, 38, 33, 52, 48, 37, 42, 28

Which stem-and-leaf plot represents the data?



11. The stem-and-leaf plot below represents the number of books read by the homeroom students during the summer months. There are 6 grade six home rooms, 5 grade seven homerooms, and 4 grade 8 homerooms at Wilson Middle School.



Which statement is NOT true based on the information in the stem-and-leaf plot?

- A** The spread of the data is 31 books.
- B** The mode for the data is 9 books.
- C** More students read less than 20 books than read more than 20 books.
- D** The center of the data is 16 books.

GRADE 6 MATHEMATICS

12. Look at the data set.

12, 15, 27, 27, 28, 30, 32, 34, 36, 42, 47

Which statement is true about the data set?

- F** The median of the data is 28.
- G** The mean of the data is 29.
- H** The interquartile range is 9.
- J** The range of the data is 34.

13. A trapezoid has bases of 12 inches and 28 inches. The height of the trapezoid is 15 inches. What is the area of the trapezoid?

Record your answer on the grid below. Be sure to use the correct place value.

					.		
+	0	0	0	0		0	0
-	1	1	1	1		1	1
	2	2	2	2		2	2
	3	3	3	3		3	3
	4	4	4	4		4	4
	5	5	5	5		5	5
	6	6	6	6		6	6
	7	7	7	7		7	7
	8	8	8	8		8	8
	9	9	9	9		9	9

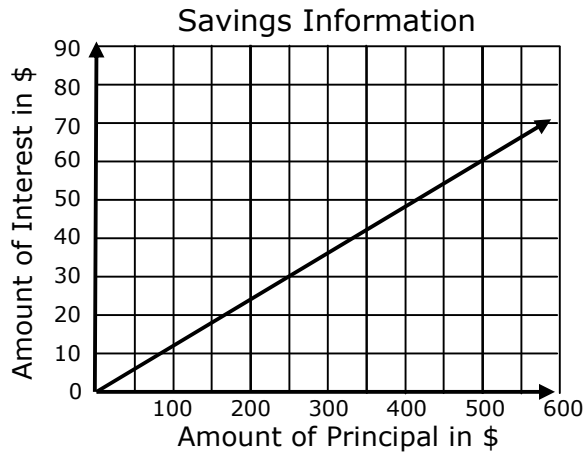
14. Mr. Glaxon is balancing his check register after the first week in March. The transactions that have occurred during this week are shown below.

Check Register				
Date	Transaction Description	Withdrawal	Deposit	Balance
				\$1,340
March 1	Automatic car payment	\$376		
March 2	Transfer from Savings Acct		\$50	
March 4	Direct Deposit from United Corp.		\$2,748	
March 6	Water Bill Payment ck #129	\$112		
March 6	Electric Bill Payment ck #130	\$189		

Which shows the balance Mr. Glaxon should have in his check register after these transactions?

- F** \$4,138
- G** \$677
- H** \$3,561
- J** \$3,461

15. The graph shows information about the principal and interest on a savings account.



Which statement is true about the information in the graph?

- A** The amount of principal depends upon the amount of interest.
- B** The amount of interest depends upon the amount of principal.
- C** The amount of interest depends upon the length of the loan.
- D** The amount of interest depends upon the percent the loan was given at.

16. What is the value of the expression $-3 + (16 \div 8 + 8)^2$?

- F** -2
- G** 103
- H** 97
- J** 23

17. A triangle has side lengths of 6 centimeters, 8 centimeters, and 12 centimeters. The triangle is to be enlarged by a scale factor of 2.5. What will be the length of the longest side in the new triangle?

- A** 12 centimeters
- B** 24 centimeters
- C** 30 centimeters
- D** 27 centimeters

GRADE 6 MATHEMATICS

18. If the expression $2(5 + 3x + 12) + 5 \times (-3)$ is rewritten as $2(5 + 3x + 12) + (-3) \times 5$, what property was used?
- F** Associative Property of Addition
 - G** Distributive Property
 - H** Commutative Property of Multiplication
 - J** Commutative Property of Addition
-

19. Suzy has a collection of nickels and dimes that contains a maximum of 20 coins. The collection has 6 dimes. Which inequality can be used to find the possible number of nickels, n , in her coin collection?
- A** $n + 6 \geq 20$
 - B** $n + 6 \leq 20$
 - C** $n - 6 \leq 20$
 - D** $n - 6 \geq 20$
-

20. The number of girls, g , in a class increased by 5 is less than the number of boys. The class has at least one girl. If there are 16 boys in the class, which number line best shows the possible number of girls in the class?

