Rational Explorations Project – Due _____

You will be creating a booklet explaining the key concepts from the rational numbers unit. Each page of the booklet is detailed below:

Page 1: Integers

- Define integers
- Draw a number line that shows all integers from -10 to 10
- Explain how you find a number's opposite
- Find the opposite of the following numbers
  - 5, -3, 0, -7, 4, 1, -2
- Describe what the opposite of any integer's opposite would be
- Describe a real world situation that would use a positive integer, and explain what 0 represents in that situation
- Describe a real world situation that would use a negative integer, and explain what 0 represents in that situation

Page 2: Absolute Value

- Explain how you find a number's absolute value
- Use a number line to show how you find the absolute value of -4
- Use a number line to show how you find the absolute value of 7
- Find the absolute value of 3 positive integers
- Find the absolute value of 3 negative integers
- Using <, >, or =, compare the absolute values of the following:
  - $|-7|$ & $|2|$
  - $|5|$ & $|-5|$
  - $|-12|$ & $|0|$

Page 3: Rational Numbers

- Define rational numbers
- Make a number line and plot the following points:
  - 5, -3.5, 2 ¼, -1 ¾, -3, 1.5, 3 ¾, 0, -2.25
- Write the previous points in order from least to greatest

Page 4: Coordinate Planes

- Draw a coordinate plane and label the *x*-axis, the *y*-axis, and the four quadrants
- Draw another coordinate plane and plot the following points on it
  - A: (-5, -2)
  - B: (6, -4)
  - C: (8, 3)
  - D: (-7, 1)
  - E: (5, 0)
  - F: (0, -3)
- Point G is located 5 units to the left of point B. Plot point G on your coordinate plane and write its location (its ordered pair)
- Point H is located 3 units above point D. Plot point H on your coordinate plane and write its location (its ordered pair).

Criteria	5 pts	3 pts	1 pt	Score
Integer Definition	Clear, correct definition that accurately describes integers	Correct definition but may be unclear	Definition is missing or is incorrect	
Integer Number Line	Number line is drawn correctly with all integers in the correct location	Number line is drawn but 1-2 integers may be in the wrong location	Number line is missing or 3 or more integers are in the wrong location	
Opposite Explanation	Clear, correct explanation of how you find an integer's opposite	Correct explanation of how you find an integer's opposite, but explanation may be unclear	Explanation is missing or is incorrect	
Opposites	The opposites of each integer are written correctly	The opposites of all but 1 integer are written correctly	The opposites of 2 or more integers are incorrect, or the opposites are missing	
Opposites of Opposites	Clear, correct explanation of how you find the opposite of an integer's opposite	Correct explanation of how you find the opposite of an integer's opposite, but explanation may be unclear	Explanation is missing or is incorrect	
Positive Integer Situation	Situation shows the use of a positive integer AND explanation of what 0 represents is correct	Situation shows the use of a positive integer OR explanation of what 0 represents is correct	Situation and explanation of what 0 represents are incorrect OR Situation is missing	
Negative Integer Situation	Situation shows the use of a negative integer AND explanation of what 0 represents is correct	Situation shows the use of a negative integer OR explanation of what 0 represents is correct	Situation and explanation of what 0 represents are incorrect OR Situation is missing	
Absolute Value Explanation	Clear, correct explanation of how you find an integer's absolute value	Correct explanation of how you find an integer's absolute value, but explanation may be unclear	Explanation is missing or is incorrect	
Absolute Value of -4	Correctly uses a number line to show the absolute value of -4	Has the correct absolute value of -4 but does not use a number line to show it	Absolute value of -4 is missing	
Absolute Value of 7	Correctly uses a number line to show the absolute value of 7	Has the correct absolute value of 7, but does not use a number line to show it	Absolute value of 7 is missing	
Absolute Value of 3 Positive Integers	Correctly finds the absolute value of 3 positive integers	Correctly finds the absolute value of 2 positive integers	Correctly finds the absolute value of 1 positive integer	
Absolute Value of 3 Negative Integers	Correctly finds the absolute values of 3 negative integers	Correctly finds the absolute values of 2 negative integers	Correctly finds the absolute value of 1 negative integer	
Comparing Absolute Values	Correctly writes and compares the absolute values of all three problems	Correctly writes and compares the absolute values of 2 problems	Correctly writes and compares the absolute value of 1 problem	
Rational Number Definition	Clear, correct definition of rational numbers	Correct definition of rational numbers, but definition may be unclear	Definition is incorrect OR definition is missing	
Number Line of Rational Numbers	All 9 rational numbers are correctly plotted on the number line	7-8 rational numbers are correctly plotted on the number line	6 or fewer rational numbers are correctly plotted on the number line	
Ordering Rational Numbers	All 9 rational numbers are correctly ordered from least to greatest	7-8 rational numbers are correctly ordered from least to greatest	6 or fewer rational numbers are correctly ordered from least to greatest	
Labeling a Coordinate Plane	An example of a coordinate plane is drawn and correctly labeled with *x*- and *y*-axes and all four quadrants	Coordinate plane is drawn correctly, but one label may be missing or incorrect	Coordinate plane is missing OR two or more labels are incorrect	
Plotting Points on a Coordinate Plane	All 6 points are correctly plotted on a coordinate plane	5 points are correctly plotted on a coordinate plane	4 or fewer points are correctly plotted on a coordinate plane	
Point G	Point G is plotted in the correct location AND its ordered pair is written correctly	Point G is plotted in the correct location OR its ordered pair is written correctly	Point G is missing	
Point H	Point H is plotted in the correct location AND its ordered pair is written correctly	Point H is plotted in the correct location OR its ordered pair is written correctly	Point H is missing	
	Total Score			