

**Math 6 - Unit 7: Rational Explorations**  
Study Guide

Name: KEY

Class Period: 1 2 3 4 Date: \_\_\_\_\_

1) What is the difference between finding the opposite of a number and finding its absolute value?

OPPOSITES ARE THE SAME DISTANCE FROM ZERO BUT IN OPPOSITE DIRECTIONS, ABSOLUTE IS THE DISTANCE FROM ZERO, BUT DIRECTION DOESN'T MATTER. ALWAYS POSITIVE

2) Which coordinate stays the same when you are reflecting a point over the x-axis?

THE X-COORDINATE STAYS THE SAME

3) Evaluate:

3a)  $|-9|$     3b)  $|11|$     3c)  $-|-23|$     3d)  $|0|$   
9    11    -23    0

OUTSIDE ABSOLUTE VALUE SYMBOLS

4) Write the numbers in order from least to greatest?

4a) 2, -5, -17,  $|-9|$ , 7, 0    -17, -5, 0, 2, 7,  $|-9|$

4b)  $|-11|$ , -7, -83,  $|-89|$ , 3, -1    -83, -7, -1, 3,  $|-11|$ ,  $|-89|$

5) Mark each of the numbers below as an integer (I) or not (N)?

5a) 4 I    5b) 0 I    5c)  $-\frac{3}{4}$  N    5d) -10 I    5e) 4.5 N

6) The table below shows today's temperature for 5 cities. Which statement is TRUE? C

City	Richmond	Knoxville	Atlanta	NYC	Boston
Temperature (°Celsius)	-22	-11	-20	-19	-13

a) Knoxville is colder than Richmond.

c) Boston is colder than Knoxville.

b) Atlanta is the coldest city.

d) Richmond is the warmest city.

7) Fill in each  $\circ$  with  $<$ ,  $>$ , or  $=$  to make a true statement.

9a)  $|-14|$   $\circ$  -14

9b) 8  $\circ$  -36

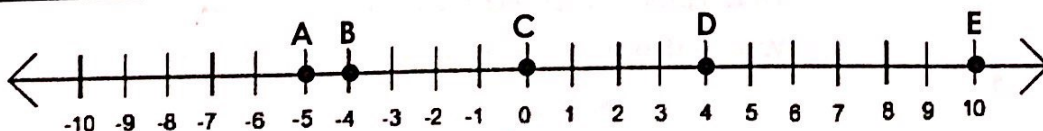
9c) 0  $\circ$  -30

9d) -4  $\circ$  4

9e)  $|-8|$   $\circ$  8

9f) 0  $\circ$   $|-57|$

Use the number line for questions 14-15.

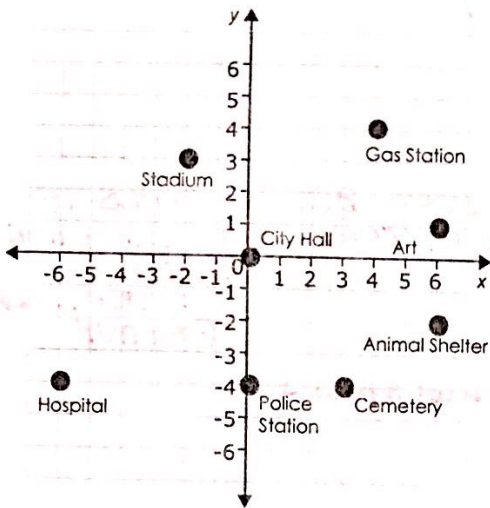


8) Which point is represented by -5? A

9) Which integer represents the **opposite** of Point E in the number line? -10

10) What is the opposite of -56? 56

Use the map to answer questions 10-13. Each unit represents one block.



11) Which ordered pair represents the location of the Hospital?  $(-6, -4)$

12) How many blocks apart are the police station and the city hall? 4 BLOCKS

13) Which building is located in quadrant III? HOSPITAL

14) Which building is located 4 blocks south of the origin? POLICE STATION

15) Write an integer to represent, "Ben added 10 songs to his iPod?" 10

16) Write an integer to represent, "Lizzie went diving 50 feet underwater?" -50

17) According to the data in the table, which student's test score changed the most between Test 1 and Test 2? SAMUEL

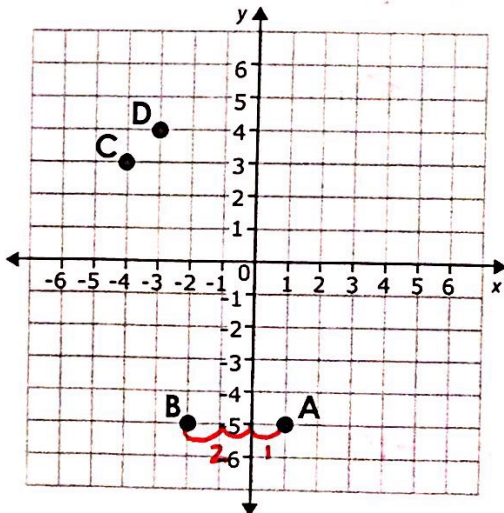
Student	Test 1 Score	Test 2 Score	Change from Test 1 to Test 2
Monserat	100	97	-3
Samya	88	95	7
Kathleen	92	89	-3
Samuel	90	75	-15

18) Tariq's bank account shows a \$0 balance. Estephanie's bank account shows a -\$43 balance. Reece's bank account shows a \$24 balance. Which friend's bank account has a greater **absolute value**? ESTEPHANIE'S

19) If you reflect the point  $(-3, -2)$  across the y-axis, what would be the coordinates of the reflected point? (HINT: You may use the coordinate plane below to help you!)  $(3, -2)$

Y-AXIS  
 (Y-COORDINATE STAYS THE SAME. X-COOR. BECOMES THE OPPOSITE)

Use the coordinate plane for questions 22-35.



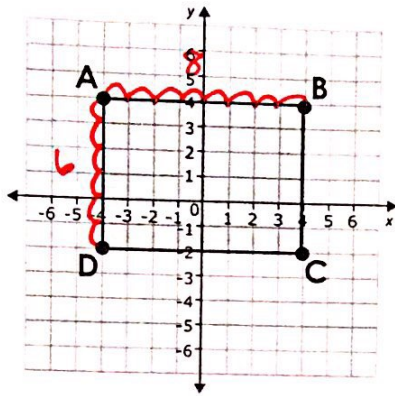
20) Which point is located at  $(-4, 3)$ ? C

21) What are the coordinates of point B?  $(-2, -5)$

22) Which point is located in Quadrant IV? A

23) Which statement is true for points B and A?

- a) B and A are reflections across the x-axis
- b) B and A are reflections across the y-axis
- c) B and A are reflected across both axes
- d) B and A are not reflections



Use the coordinate plane for questions 26-28.

24) What is the distance between Point A and Point D?

6 UNITS

25) What is the perimeter of rectangle ABCD?  $6+8+6+8$

28 UNITS

26) What is the area of rectangle ABCD?

$$A = b \cdot h$$

$$A = 6 \cdot 8$$

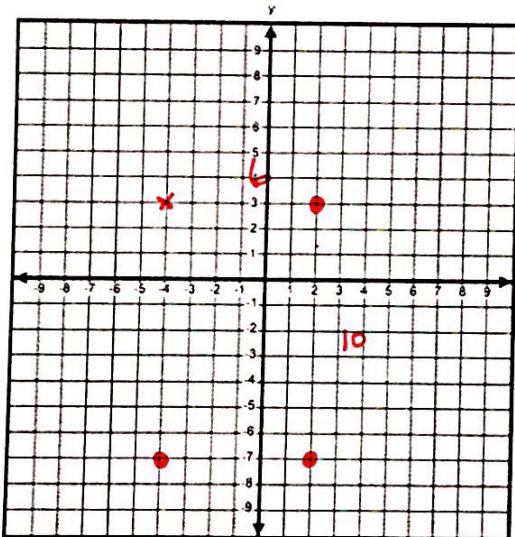
48 UNITS<sup>2</sup>

27) Put the rational numbers in order from least to greatest? 3, 0, -7,  $-\frac{3}{7}$

$-7, -\frac{3}{7}, 0, 3$

28) The ordered pairs (2, -7), (-4, -7), and (2, 3) are three vertices of a rectangle.

Which ordered pair is the 4<sup>th</sup> vertex? Use the coordinate plane below to find the 4<sup>th</sup> vertex and then find the perimeter and area for the rectangle.



29) What are the coordinates of the 4<sup>th</sup> ordered pair?

(-4, 3)

30) Area: ~~30 UNITS~~  $A = b \cdot h$

$$A = 6 \cdot 10$$

$$A = 60 \text{ UNITS}^2$$

31) Perimeter: \_\_\_\_\_

$$P = 6 + 10 + 6 + 10$$

$$P = 32 \text{ UNITS}$$