Name: _____

Unit #2: Integers and Coordinate Plane
Resources: Big Ideas: Chapter 6
Common Core Standards: 6.NS.5; 6.NS.6a-c; 6.NS.7a-d; 6.NS.8

Number	Learning Targets	Common Core Standard	Resources
1	I can understand positive and negative integers and graph them on a number line.	6.NS.5, 6.NS.6a, 6.NS.6c	6.1
2	I can use a number line to compare and order positive and negative integers.	6.NS.6c, 6.NS.7a, 6.NS7b	6.2
3	I can graph fractions and decimals on a number line.	6.NS.5, 6.NS.6a, 6.NS.6c, 6.NS.7a & b	6.3
4	I can find the absolute value of numbers and use it to compare numbers in real-life situations.	6.NS.7c, 6.NS.7d	6.4
5	I can describe and plot points in the coordinate plane and find the distance between them.	6.NS.6b, 6.NS.6c, 6.NS.8	6.5

My Practice:

Number	Pre-test:	Exit slip scores	Day #2 Homework	Extra Targeted Practice	Post-test:
1	_____/5pts				_____/6 pts
2	_____/5 pts				_____/7pts
3	_____/5 pts				_____/10 pts
4	____/10 pts				_____/10 pts
5	_____/9 pts				_____/10 pts

My Final Pretest Score: _____ /34 **My Final Pretest Percent** _____ %

My Final Posttest Score: _____ /43 **My Final Posttest Percent:** _____ %

My percent of increase between the Pre and Post test scores = _____ !!

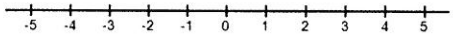
Date:_____

6.1 Integers Student Notes

Objective: Represent values that are less than zero with numbers

Vocabulary:

- Positive numbers – all numbers that are _____than zero
- Negative numbers – all numbers that are _____than zero
- Opposites – two numbers that are the same distance from 0 on a number line.

  3 and -3 are opposites: 

- Integers - the set of whole numbers and their opposites. They can be both

  _____ and _____.

Examples: Write a positive or negative integer that represents the situation:

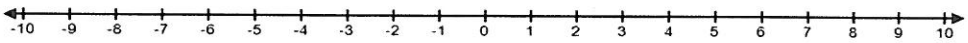
1.) A hiker climbs 900 feet up a mountain. _____

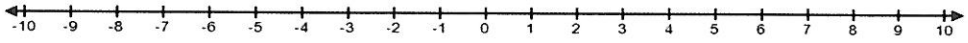
2.) You have a debt of $24. _____

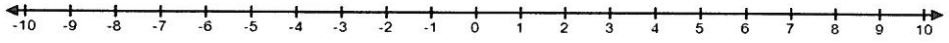
3.) A student loses three points for being late to class. _____

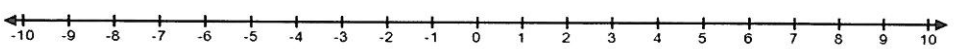
4.) A savings account earns ten dollars. _____

Examples: Graph each integer and its opposite.

5.) _____ 

6.) _____ 

7.) _____ 

8.) _____ 

Date:_____

6.1 Integers Day 1 Homework

6.1 Exercises

Check It Out
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Vocabulary and Concept Check

1. **VOCABULARY** Which of the following numbers are integers?

$$8, -4.1, -9, \frac{1}{6}, 1.75, 22$$

2. **OPEN-ENDED** Describe a real-life example that you can represent by -1200.
3. **VOCABULARY** List three words or phrases used in real life that indicate negative numbers.

Practice and Problem Solving

Graph the number that represents the situation on a number line.

4. A football team loses 3 yards.
5. The temperature is 6 degrees below zero.
6. A person climbs 600 feet up a mountain.
7. You earn $15 raking leaves.

Write a positive or negative integer that represents the situation.

8. You withdraw $42 from an account.
9. An airplane climbs to 37,500 feet.
10. The temperature rises 17 degrees.
11. You lose 56 points in a video game.
12. A ball falls 350 centimeters.
13. You receive 5 bonus points in class.

Answer all 13 questions on answer sheet →

6.1 Day 1 HW Answer Sheet

Date: _____

1.	2.
3.	
4. 	5. 
6. 	7. 
8.	9.
10.	11.
12.	13.

Name _____ Date _____

6.1 Practice A Day #2 Homework

Two Pages →

Graph the number that represents the situation on a number line.

1. You lose a $5 bill while walking home from school.

2. You download 7 songs to your MP3 player.

3. The wind chill is 35 degrees below zero.

Write a positive or negative integer that represents the situation.

4. A parachutist descends 50 feet.

5. A baker discards 12 loaves of bread.

6. A football team advances 10 yards.

7. You earn $15 for mowing the neighbor's lawn.

Graph the integer and its opposite.

8. 5

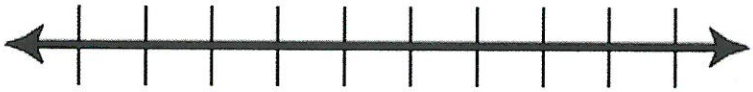
9. −2

10. 13

11. 20

12. −18

13. −25



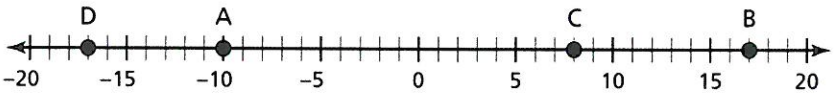
6.2 Day #2 Homework Continued...

14. Describe and correct the error in describing opposites.

✗ The opposite of 7 is $\frac{1}{7}$.

Identify the integer represented by the point on the number line.

15. A **16.** B **17.** C **18.** D



19. To ride an amusement park ride, your height must be at or above the line on the sign. For each set of information, write an integer that represents a person's height relative to the line on the sign and write *yes* or *no* as to whether they can ride the ride.

a. Height is 2 inches above the line on the sign.

b. Height is 5 inches below the line on the sign.

c. Height is 1 inch below the line on the sign.

Date:_____

6.2 Comparing and Ordering Integers Student Notes

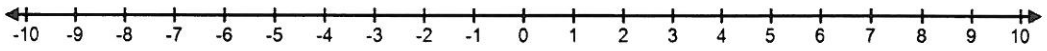
Objective: Use a number line to order real-life events

Vocabulary:

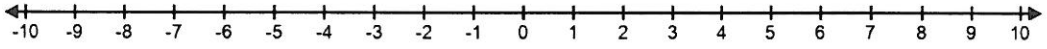
- Greater than symbol _____
- Less than symbol _____

Examples: Compare integers on a number line. Draw both numbers on the line. Then use an inequality to show your answer.

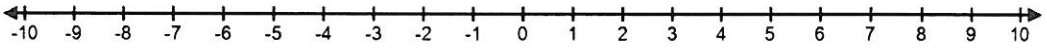
1.) Compare 2 and -6. 2 _____ -6



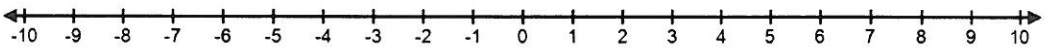
2.) Compare -5 and -3. -5 _____ -3



3.) Compare -8 and -7. -8 _____ -7

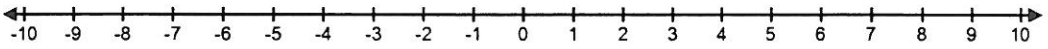


4.) Order -4, 3, 0, -1, -2 from least to greatest. Graph each integer on a number line.



Order your numbers: _____, _____, _____, _____, _____

5.) A number is greater than -8 and less than 0. What is the greatest integer value of this number? _____



Date:_____

6.2 Comparing and Ordering Integers Day 1 Homework

Explain on separate sheet of paper

6.2 Exercises

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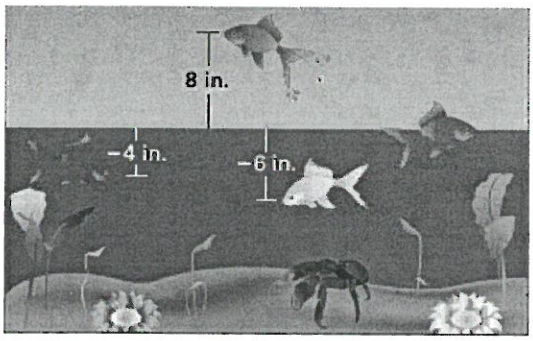
Vocabulary and Concept Check

1. **WRITING** Explain how to use a number line to compare two integers.
2. **REASONING** The positions of four fish are shown.
   a. Use red, blue, yellow, and green dots to graph the positions of the fish on a horizontal number line and a vertical number line.
   b. Explain how to use the number lines from part (a) to order the positions from least to greatest.
3. **NUMBER SENSE** a and b are negative integers. Compare a and b. Explain your reasoning.



Practice and Problem Solving

Copy and complete the statement using < or >.

4. $3 \square 0$ **5.** $-2 \square 0$ **6.** $6 \square -6$ **7.** $3 \square -4$

8. $-1 \square 4$ **9.** $-7 \square -8$ **10.** $-3 \square -2$ **11.** $-5 \square -10$

3._____

4.	5.	6.	7.
8.	9.	10.	11.

Name _____ Date _____

6.2 Practice A-day 2 Homework

Complete the statement using < or >.

1. -4 ____ 0

2. 7 _____ 0

3. 3 _____ -3

4. -6 _____ 2

5. 5 _____ 9

6. -8 _____ -2

7. Describe and correct the error in comparing 2 and -5.

✗ $2 < 5$. So, $2 < -5$.

Order the integers from least to greatest.

8. $0, -2, 2, 3, -3$

9. $1, -3, 4, -4, 2$

10. $3, -4, 4, 5, -5$

11. $6, -3, 1, 4, -5$

12. A water pipe is 3 feet below the ground. A gas pipe is 8 feet below the ground. Which pipe is higher? Explain your answer.

13. A number is between -1 and -5. What is the least possible integer value of its opposite?

Tell whether the statement is *always*, *sometimes*, or *never* true. Explain.

14. A negative integer is greater than its opposite.

15. An integer is more than its opposite and less than 0.

16. An integer is less than its opposite.

17. Nine students choose integers. Seven of them are

$-16, 12, -13, -6, -5, 6$, and 1.

a. Order the numbers from least to greatest.

b. When all nine integers are ordered from least to greatest, the middle integer is -6. Describe the other two integers.

Date:_____

6.3 Fractions and Decimals on the Number Line
STUDENT NOTES

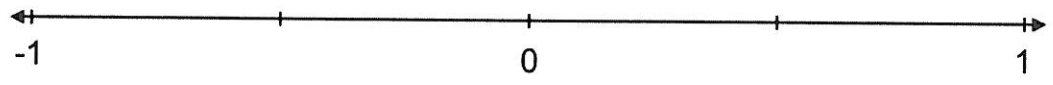
Objective: Use a number line to compare positive and negative fractions and decimals.

Vocabulary:

- Least Common Denominator: In two or more fractions, it is the least common multiple of the denominators (Example: $\frac{4}{5}$ and $\frac{3}{4}$, LCD = _____)

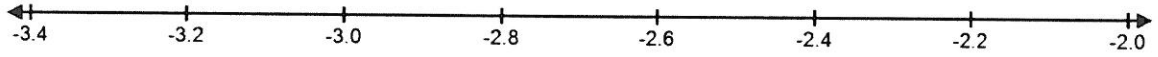
Examples:

1.) Graph $\frac{1}{3}$ and it's opposite.

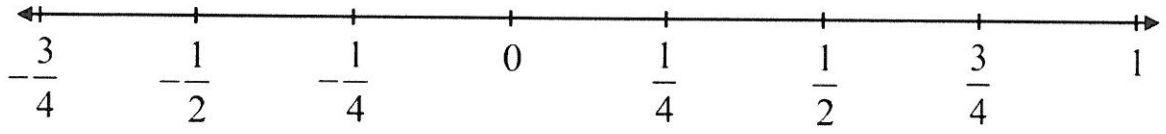


Compare integers on a number line. Draw both numbers on the line. Then use an inequality to show your answer.

2.) Compare -2.08 and -2.8. -2.08 _____ -2.8

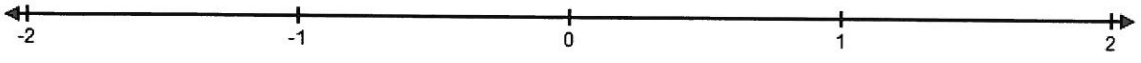


3.) Compare $-\frac{2}{5}$ and $-\frac{3}{4}$. $-\frac{2}{5}$ _____ $-\frac{3}{4}$



4.) Arrange these decimals from **least** to **greatest** on the number line below:

- 1.75 1.1 0.65 - 0.2 - 2.1



Date:_____

6.3 Fractions and Decimals on the Number line Day 1 Homework

6.3 Exercises

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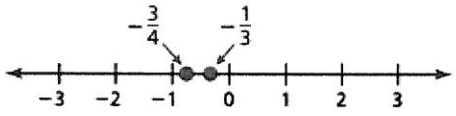
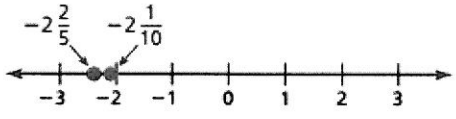
Vocabulary and Concept Check

1. **NUMBER SENSE** Which statement is *not* true?
   a. On a number line, $-2\frac{1}{6}$ is to the left of $-2\frac{2}{3}$.
   b. $-2\frac{2}{3}$ is less than $-2\frac{1}{6}$.
   c. $-2\frac{1}{6}$ is greater than $-2\frac{2}{3}$.
   d. On a number line, $-2\frac{2}{3}$ is to the left of $-2\frac{1}{6}$.
2. **NUMBER SENSE** Is a negative decimal *always*, *sometimes*, or *never* equal to a positive decimal? Explain.
3. **NUMBER SENSE** On a number line, is -2.06 or -2.6 farther to the left?

Practice and Problem Solving

Find a fraction or mixed number that is between the two numbers.

4. 

5. 

Graph the integer and its opposite. *(Section 6.1)*

28. -7 **29.** 40 **30.** 100 **31.** -15

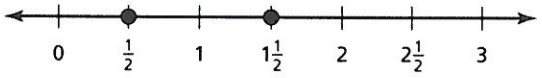
4.	5.
28. 	29. 
30. 	31. 

Name _____ Date _____

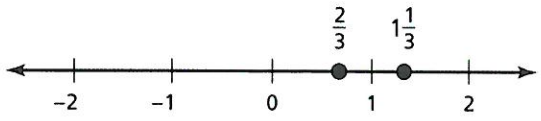
6.3 Practice A Day 2 Homework* *Do Both Sides* *

Find a fraction or mixed number that is between the two numbers.

1.



2.



Graph the number and its opposite.

3. $-\frac{3}{4}$

4. $1\frac{1}{3}$

5. -2.6

6. 3.75

Copy and complete the statement using < or >.

7. $-\frac{10}{3}$? $-\frac{7}{4}$

8. $\frac{4}{5}$? $-1\frac{7}{8}$

9. $-\frac{7}{6}$? $-\frac{6}{7}$

10. $-2\frac{3}{4}$? $-2\frac{2}{3}$

11. 2.1 ? -2.1

12. -0.08 ? -0.8

13. -3.08 ? -4.16

14. -4.82 ? -4.89

DOUBLE SIDED →

Practice A

6.3 Day #2 Homework continued

* Side 2 *

Order the numbers from least to greatest.

15. $-\frac{7}{10}, -\frac{1}{10}, -\frac{2}{5}, -\frac{3}{10}, -\frac{1}{2}$

16. $1\frac{1}{12}, -\frac{3}{12}, 1\frac{5}{12}, \frac{7}{12}, -\frac{2}{12}$

17. $-\frac{2}{3}, -2, -1\frac{1}{3}, -1\frac{2}{3}, -2\frac{2}{3}$

18. $-2.4, -2.1, -3, -2.75, -2$

19. The position of a deep sea probe is $-2\frac{3}{4}$ fathoms relative to sea level.

After finishing taking data, it moves to $-2\frac{5}{8}$ fathoms relative to sea level.

Which was deeper, the first mission or the second?

20. An oceanographer takes readings at the following positions relative to sea level: -2.48 kilometers, -2.83 kilometers, -2.70 kilometers, and -2.15 kilometers. Order the positions from farthest from sea level to closest to sea level.

21. Describe and correct the error in determining which number is greater.

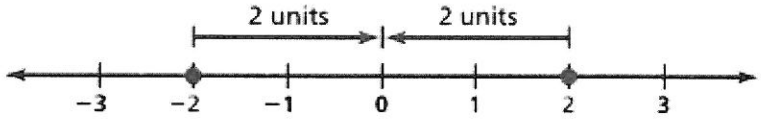
✗ $-5\frac{5}{6}$ is greater than -5.8 because $5\frac{5}{6}$ is greater than 5.8.

6.4 Absolute Value Student Notes

Objective: Find the absolute value of an integer.

Vocabulary: The Absolute Value of a number is the distance between the number and zero on a number line. The absolute value of a is written as $|a|$

Numbers $|-2| = 2$ $|2| = 2$



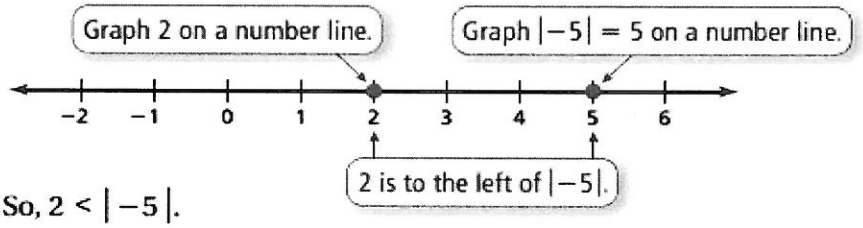
The absolute value of -2 equals 2. The absolute value of 2 equals 2.

Example:

Find the Absolute Value

1.)	2.)	3.)
4.)	5.)	6.)

Compare 2 and $|-5|$.



∴ So, $2 < |-5|$.

Compare

7.)	8.)
9.)	10.)

Date:_____

6.4 Absolute Value Day 1 Homework

6.4 Exercises

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Practice and Problem Solving

Use a vertical number line to graph the location of each object. Then tell which object is farther from sea level.

4. Scuba diver: -15 m
   Dolphin: -22 m

5. Seagull: 12 m
   School of fish: -4 m

6. Shark: -40 m
   Flag on a ship: 32 m

Find the absolute value.

7. $|-2|$
8. $|23|$
9. $|-8.35|$
10. $\left|\frac{1}{6}\right|$
11. $\left|-3\frac{2}{5}\right|$
12. $|11|$
13. $|14.06|$
14. $|-68|$

4.	5.	6.
		

7.	8.	9.	10.
11.	12.	13.	14.

Name _____ Date _____

6.4 Practice A Day 2 Homework * *Do Both Sides*

Use a vertical number line to graph the location of each object. Then tell which object is farther from sea level.

1. Manatee: -2 m
   Flounder: -13 m

2. Snapper: -8 m
   Osprey: 7 m

Find the absolute value.

3. $|-4|$

4. $|-1|$

5. $|5.2|$

6. $|-12|$

7. $\left|2\frac{1}{3}\right|$

8. $|-51|$

9. $\left|-\frac{5}{6}\right|$

10. $|-38|$

11. $|40|$

12. Describe and correct the error in finding the absolute value.

$\times$ $|-20| = -20$

Complete the statement using <, >, or =.

13. $|-6|$ _____ 4

14. 10 _____ $|-10|$

15. $|-4.5|$ _____ $|-5.2|$

16. $\left|\frac{2}{3}\right|$ _____ $\left|-\frac{1}{6}\right|$

Double sided →

6.4 Practice A

6.4 Day #2 HW continued... * Side 2 *

17. In a sailboat race series, a boat's score indicates the number of points it is behind the winning boat. Your boat has score -18 and your friend's boat has score -23.

a. Find the absolute value score of each boat.

Your boat_____ Your friend's boat_____

b. Whose boat is farther behind the winning boat? _____

Order the values from least to greatest.

18. $0, |-3|, 1, -2, |5|$

19. $|3|, |-1|, -3, |-5|, -5$

Tell whether the statement is *always*, *sometimes*, or *never* true. Explain.

20. The absolute value of a negative number is its opposite.

21. The absolute value of a number is less than the number.

22. The absolute value of a negative number is equal to the number.

Date:_____

6.5 The Coordinate Plane Student Notes

Objective: Graph and locate points that contain negative numbers in a coordinate plane.

Vocabulary:

- Coordinate Plane: Formed by the intersection of a _____ number line and a _____ number line.
- Origin: The point where the number lines intersect. (_____, _____)
- Quadrants: Separate the coordinate plane into _____ regions.

Examples:

1.) Label the four quadrants.

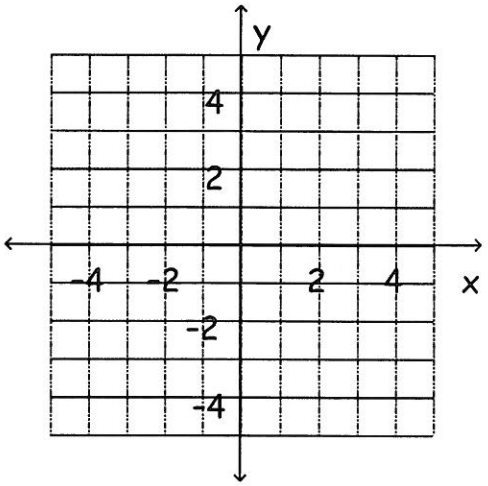
2.) Plot the following points on the graph:

All points are (x, y)

A (3, 4) B (-2, 3)

C (2, -5) D (-1, -2)

E (3, 0) F (0, -4)



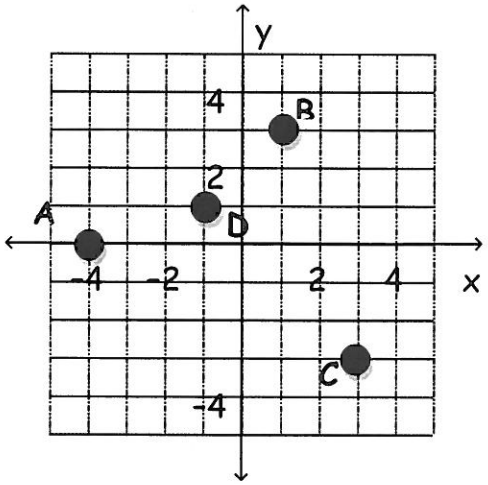
3.) Write the coordinate for each point.

A =

B =

C =

D =



4a.) The coordinates of a square are: A (3, 4); B(0, 4); C(0, 1) Plot the three coordinates.

b.) What is coordinate D?

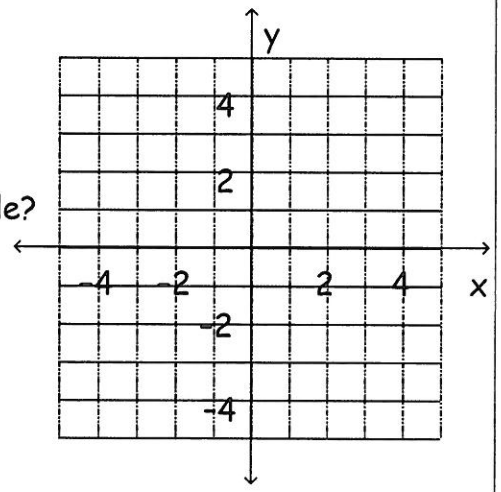
D =

c.) What is the length of each side?

_____

d.) What is the perimeter of the square?

_____



Date:_____

6.5 Coordinate Plane Day 1 Homework

6.5 Exercises

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Help with Homework
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Vocabulary and Concept Check

1. **VOCABULARY** How many quadrants are in a coordinate plane?
2. **VOCABULARY** Is the point $(0, -7)$ on the x-axis or the y-axis?
3. **WHICH ONE DOESN'T BELONG?** Which point does *not* belong with the other three? Explain your reasoning.

$(-2, 1)$ $(-4, 5)$ $(2, -3)$ $(-1, 3)$

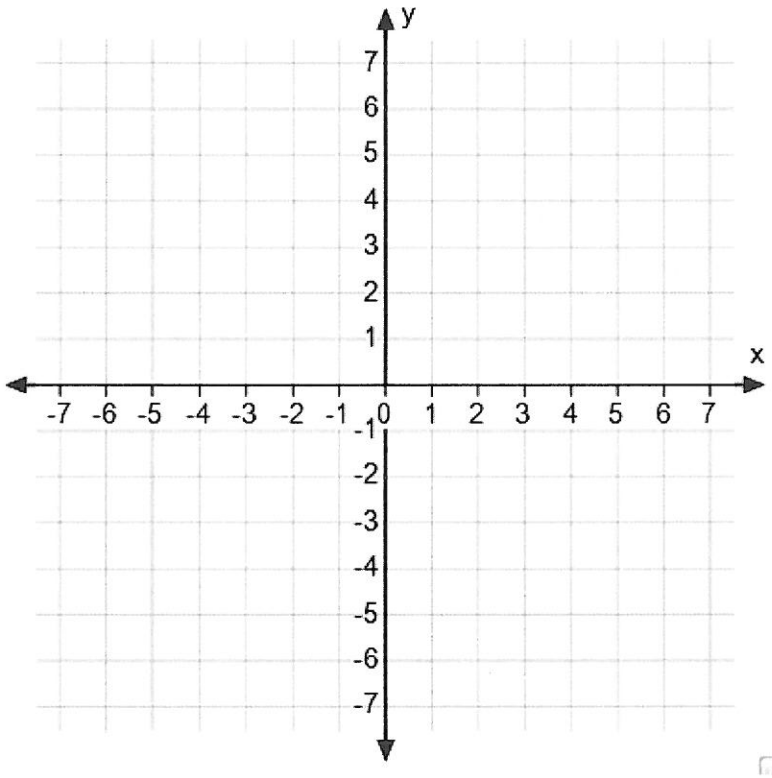
Practice and Problem Solving

4. Plot and connect the points to make a picture.

1(5, 0) 2(2, −3) 3(2, −2) 4(0, −2) 5(−3, −2)
6(−3, 0) 7(−3, 2) 8(0, 2) 9(2, 2) 10(2, 3)

1.	2.	3.

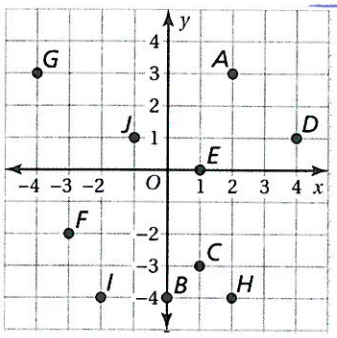
4.



Name _____ Date _____

6.5 Practice A Day 2 Homework *do both sides*

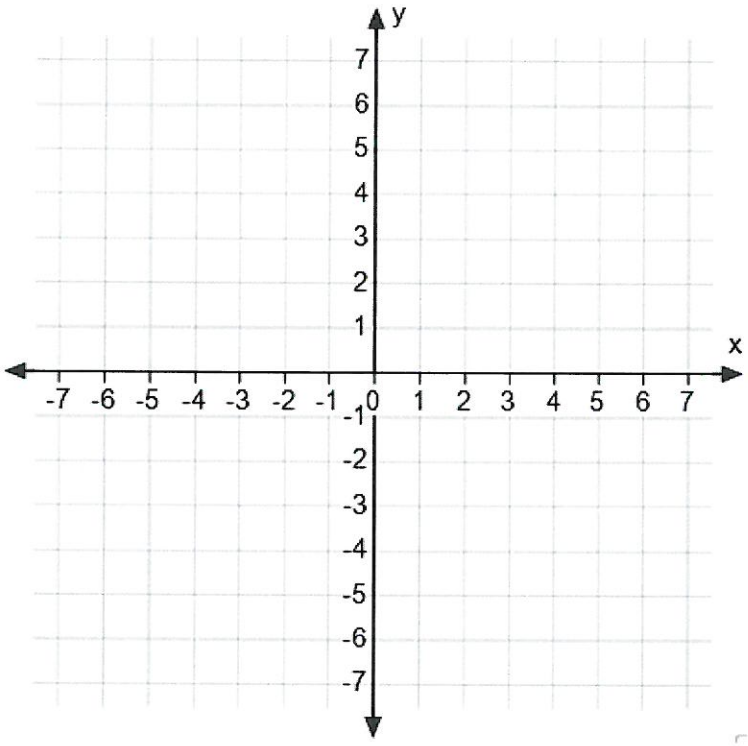
Write an ordered pair corresponding to the point.



1. Point A
2. Point B
3. Point C
4. Point D
5. Point E
6. Point F
7. Point G
8. Point H
9. Point I
10. Point J

Plot the ordered pair in a coordinate plane. Describe the location of the point.

11. $K(5, 2)$
12. $L(-3, 6)$
13. $M(-5, 0)$
14. $N(-4.5, 2.5)$
15. $P(7, -4)$
16. $Q\left(1\frac{1}{2}, 3\right)$
17. $R(-2, 4)$
18. $S(0, 3)$



DOUBLE SIDED

6.5 Practice A *Side 2*

19. Describe and correct the error in the solution.

> ✗ To plot $(3, -4)$, start at $(0, 0)$ and move 3 units up and 4 units left.

Tell whether the statement is *sometimes*, *always*, or *never* true.

20. The y-coordinate of a point in Quadrant II is positive.

21. The x-coordinate of a point on the y-axis is zero.

22. The y-coordinate of a point on the y-axis is positive.

23. Your house is located at $(0, 0)$.

a. To get from your house to school, you walk 2 blocks east and 1 block south. What ordered pair corresponds to the location of your school?

b. To get from your house to the mall, you walk 4 blocks west and 3 blocks north. What ordered pair corresponds to the location of the mall?

c. Is your school or the mall closer to your home?

d. Describe how you would walk from your school to the mall.

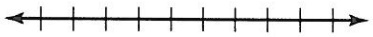
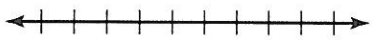
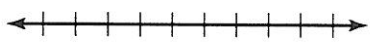
e. Your friend lives 2 blocks from the mall. Is your friend's house in the same quadrant as the mall? Explain.

Name _____ Units _____ Date _____

Math 6th: Unit 2 Integers and the Coordinate Plane STUDY GUIDE

Total Score: _____/34 pts

Directions: Carefully read and follow the directions for each section. Remember to **SHOW YOUR WORK** and write your answers on the lines provided. Don't forget the correct units!

Total:	
2 points LT1 **Score:**	**Write a positive or negative integer that represents the situation.** 1.) A worm is 7 inches below the ground 1.) _____ 2.) A boy gained 15 pounds by the end of his freshman year 2.)_____
1 point LT1 **Score:**	3.) Write a real life situation that would use the number -3 and then graph it on a number line. 
2 points LT1 **Score:**	4.) A number is greater than -8 and less than 15. What is the least possible integer value of this number? What is the greatest possible integer value of this number? Least _____ (1 pt) Greatest_____ (1 pt)
Learning Target #1 Score: Add points from 1-4: _____ /5 pts	
3 points LT2 **Score:**	**Compare the statement using <, >, or =.** 5.) -2 _____ -10 6.) 15 _____ -15 7.) -6 _____ -5
2 points LT2 **Score:**	**Order the integers from least to greatest.** 8.) 6, -4, 5, -2, 0 9.) 7, -10, -5, -2, 5 8.) ____ , ____ , ____ , ____ , ____ 9.) ____ , ____ , ____ , ____ , ____
Learning Target #2 Score: Add points from 5-9: _____/5 pts	
2 points LT3 **Score:**	**Graph the number and its opposite.** 10.) $3\frac{3}{4}$ 11.) -4.5  

2 points LT3

Score:

Complete the statement using <, >, or =. (Use Common Denominators)

12.) $-\frac{2}{4}$ _____ $-\frac{2}{6}$

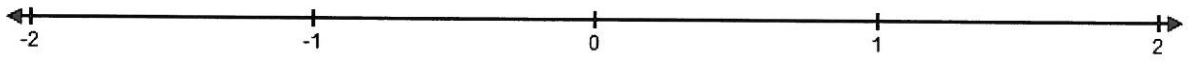
13.) $2\frac{2}{3}$ _____ $2\frac{1}{4}$

1 points LT3

Score:

14.) Arrange these decimals from **least** to **greatest** on the number line below:

- 1.75 -0.53 1.0 -0.2 1.5



Learning Target #3 Score: Add points from 10-14_____/5 pts

2 points LT4

Score:

15.) What two numbers have the absolute value of 19

15.) _____ and _____

3 points LT4

Score:

Complete the statement using <, >, or =.

16.) 7_____ | -7| 17.) 0 _____ | 4 | 18.) |5| _____ |-6|

5 points LT4

Score:

19.) Sue is 115 feet above a lake in a hot air balloon. Zach is 8 feet below the water scuba diving.

19a.) Write an integer representing Sue and Zach's height.

a.) Sue = _____ Zach = _____

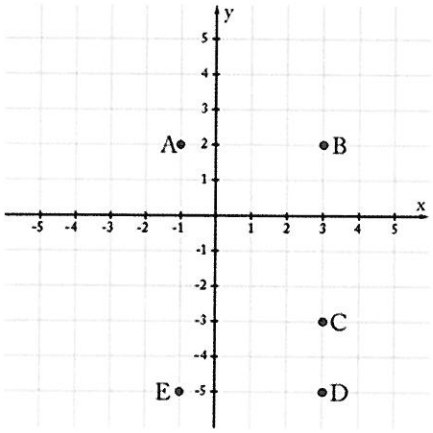
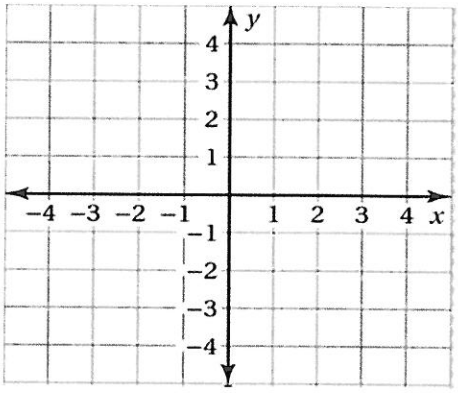
b.) Find the absolute value of each integer.

b.) Sue = _____ Zach = _____

c.) Which person is farther from the ground surface?

c.) Circle One: Sue or Zach

Learning Target #4 Score: Add points from 15-19_____/10 pts

5 points LT5 **Score:**	**20.) Write an ordered pair corresponding to the point.**  a.) _____ b.) _____ c.) _____ d.) _____ e.) _____
4 points LT5 **Score:**	21.) The vertices of rectangle ABCD are A(-4, 3), B(-2, 3) and C(-4, -1)  1 pt for graph a.) Plot the points on the graph b.) What are the coordinates of D? c.) What is the length of $\overline{BD}$ d.) What is the perimeter of the rectangle? 21b.) _____ 21c.) _____ 21d.) _____
Learning Target #5 Score: Add points from #20-21_____/9 pts	