

# 6<sup>th</sup> Grade Math- Unit 7 Packet

Name: \_\_\_\_\_

Period: \_\_\_\_\_

## Calendar:

<b>Wednesday, January 30<sup>th</sup></b>	<b>Thursday, January 31<sup>st</sup></b>	<b>Friday, February 1<sup>st</sup></b>
<ul style="list-style-type: none"> <li>• Focus: Integers</li> <li>• Online Textbook: Chapter 12- Lesson 1</li> <li>• IXL Topic: M.1 &amp; M.2 &amp; M.4</li> </ul>	<ul style="list-style-type: none"> <li>• Focus: Absolute Value</li> <li>• Online Textbook: Chapter 12- Lesson 2</li> <li>• IXL Topic: M.3</li> </ul>	<ul style="list-style-type: none"> <li>• Focus: Comparing Integers and Rational Numbers</li> <li>• Online Textbook: Chapter 12- Lesson 3 and 5</li> <li>• IXL Topic: M.5 &amp; M.6</li> </ul>
<b>Monday, February 4<sup>th</sup></b>	<b>Tuesday, February 5<sup>th</sup></b>	<b>Wednesday, February 6<sup>th</sup></b>
<ul style="list-style-type: none"> <li>• Focus: Terminating and Repeating Decimals</li> <li>• Online Textbook: Chapter 12- Lesson 4 and 6</li> <li>• IXL Topic: X.1 &amp; X.3</li> </ul>	<ul style="list-style-type: none"> <li>• Focus: Coordinate Plane Introduction and Coordinate Plane Graphing</li> <li>• Online Textbook: Chapter 12- Lesson 7</li> <li>• IXL Topic: X.3 &amp; X.4</li> </ul>	<ul style="list-style-type: none"> <li>• Focus: Coordinate Plane Polygons and Distance on Coordinate Plane</li> <li>• Online Textbook: Chapter 12- Lesson 8</li> <li>• IXL Topic: X.5</li> </ul>
<b>Thursday, February 7<sup>th</sup></b>	<b>Friday, February 8<sup>th</sup></b>	
<ul style="list-style-type: none"> <li>• Review</li> </ul>	<ul style="list-style-type: none"> <li>• Quiz (over everything in Chapter 12)</li> </ul>	

*\*January 28<sup>th</sup> and 29<sup>th</sup> will be designated for iReady Math Diagnostic Testing*

**\*If Lost, Please Return to Ms. Rankin (Room F106)**



## Standards:

- MGSE6.NS.5 Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, debits/credits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.
- MGSE6.NS.6 Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.
- MGSE6.NS.6a Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g.,  $-(-3) = 3$ , and that 0 is its own opposite.
- MGSE6.NS.6b Understand signs of number in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.
- MGSE6.NS.6c Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.
- MGSE6.NS.7 Understand ordering and absolute value of rational numbers.
- MGSE6.NS.7a Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram.
- MGSE6.NS.7b Write, interpret, and explain statements of order for rational numbers in real world contexts.
- MGSE6.NS.7c Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real world situation.
- MGSE6.NS.7d Distinguish comparisons of absolute value from statements about order.
- MGSE6.NS.8 Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.
- MGSE6.G.3. Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply those techniques in the context of solving real-world mathematical problems.

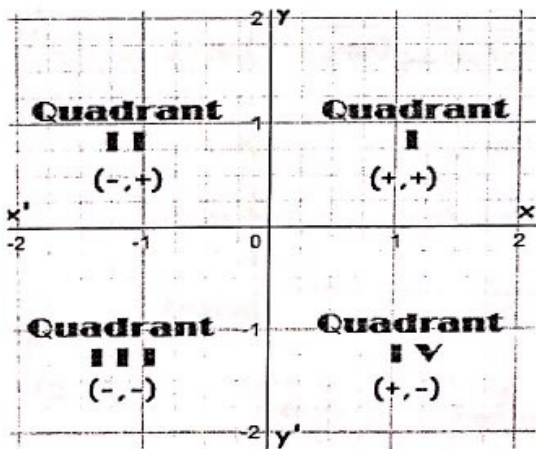
## Essential Questions:

- What is an integer?
- How can I find the absolute value of a number?
- How can I order integers?
- What is a rational number
- How can I order rational number?
- What is the difference between a repeating decimal and a terminating decimal?
- What is the coordinate plane?
- How can I graph points on the coordinate plane?
- What are the quadrants on a coordinate plane?
- How do I find distance on a coordinate plane?



## Vocabulary Words from Chapter 12:

- **Integers**- positive whole numbers, their opposites, and zero
- **Negative Integers**- represent data that are less than a 0, A negative integer is written with a - sign.
- **Positive Integers**- represent data that are greater than zero
- **Absolute Value**- A distance between a number and 0 on a number line
- **Opposites**- numbers that are the same distance from zero in opposite directions. (The opposite of the opposite is itself.)
- **Rational Number**- Any number that can be written as a fraction. Every rational number can be written as either a **terminating** decimal or a **repeating decimal**
- **Terminating Decimal**- A decimal that has digits that do not go on forever
- **Repeating Decimal**- A decimal number that, after a certain point, repeats one or more digits forever
- **Bar Notation**- indicates a number pattern that repeats forever. A bar is placed over the digits that repeat
- **Quadrants**- A coordinate plane is formed when the x-axis and y-axis intersect at their zero points. The axes separate the coordinate plane into four regions that are called quadrants



$\{ \dots -3, -2, -1, 0, 1, 2, 3 \dots \}$

Negative integers

Positive integers

0 is neither positive nor negative

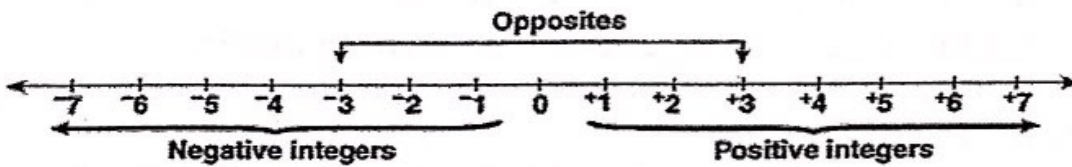
$$\underline{2.2222 \dots} = 2.\overline{2}$$

# Lesson 1: Integers & Graphing

\_\_\_\_\_ are positive whole numbers, their opposites, and zero.

\_\_\_\_\_ are used to represent integers less than zero


\_\_\_\_\_ are used to represent integers greater than zero



Write an integer to describe each situation.

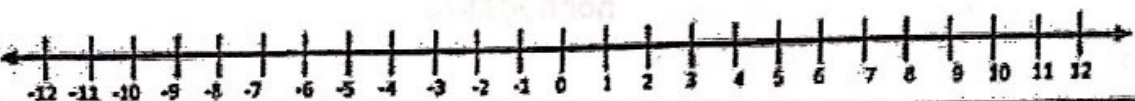
Example: Mount McKinley is 20,320 feet above sea level    answer: +20,320


- |  |   |
|--|---|
| 1. Death Valley is 282 feet below sea level<br>_____ | 6. The temperature drops 12 degrees<br>_____    |
| 2. It is 10 degrees Fahrenheit _____                 | 7. You withdraw \$42 dollars _____              |
| 3. I owe Jana \$18 _____                             | 8. You deposit \$19 _____                       |
| 4. A loss of 20 yards _____                          | 9. The elevator traveled down 4 floors<br>_____ |
| 5. A snail climbs 3 inches up a wall<br>_____        | 10. My dog gained 19 lbs _____                  |

1.  In which situation would you be at the lowest point? \_\_\_\_\_ The highest point? \_\_\_\_\_

A. You climb 10 feet up the mast  
B. You are at the water's surface  
C. You dove 8 feet under the water's surface  
D. You are snorkeling 3 feet below the surface

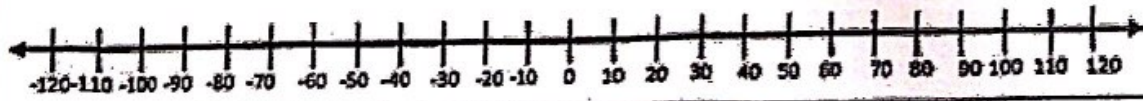
Plot A-D answers and label them on the number line.



2.  In which situation would you feel the hottest? \_\_\_\_\_ The coldest? \_\_\_\_\_

A. You have a fever of 100°F  
B. You are outside in 0°F  
C. Your average body temperature is 98.6°F  
D. You are in Alaska at -65°F

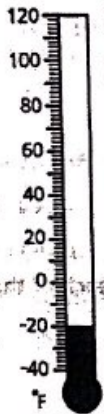
Plot A-D answers and label them on the number line.



①



1 Emily read the thermometer outside.



What integer represents the temperature?

Answer \_\_\_\_\_ °F

2 Which of these situations has a result of 0?

- A Jane had \$4. She gave \$3 to her friend. She had \$1 left.
- B The temperature fell 9°. Later, the temperature rose 10°.
- C A running back gained 10 yards. On the next play, the running back lost 11 yards.
- D A hot air balloon rose 539 feet. The hot air balloon then dropped 539 feet.

3 Plays in a football game can be measured in yards gained and yards lost. Write integers for each description in the table.

Football Play	Integer
A penalty resulted in the home team losing 15 yards.	
A running back gained 25 yards.	
A quarterback threw an incomplete pass that resulted in no gain.	
A quarterback was tackled for a 5-yard loss.	

4 The highest point in the United States is Mt. McKinley in Alaska. It has an elevation of 20,320 feet above sea level. The lowest point in the United States is Badwater Basin, Death Valley, California, which is 282 feet below sea level.

Part A Write Mt. McKinley's elevation as an integer.

Answer \_\_\_\_\_ feet

Write Badwater Basin's elevation as an integer.

Answer \_\_\_\_\_ feet

Part B Knowing that Mt. McKinley is above sea level and Death Valley is below sea level, what can you conclude about the integer that represents sea level?

5 Which of the following numbers are negative integers? Select all that apply.

- A 2
- B 0
- C 3
- D -45
- E -18
- F 12
- G -98




6 Use what you know about integers to write an integer for each of the following situations.

- 1 Jean withdrew \$50 from her savings account. \_\_\_\_\_
- 2 Alison climbed 200 feet up a mountain. \_\_\_\_\_
- 3 Luke has no money in his piggy bank. \_\_\_\_\_
- 4 Jameson dove 6 feet into the pool. \_\_\_\_\_

# ILLUSTRATING INTEGERS

NAME: \_\_\_\_\_

Fill in the missing information for each section of the table below.

Situation & Number Line	Integer	Illustration
A temperature of 30° below zero.		
		
The submarine is 342 feet below sea level.		
		
A skydiver is 258 feet above the ground.		
		

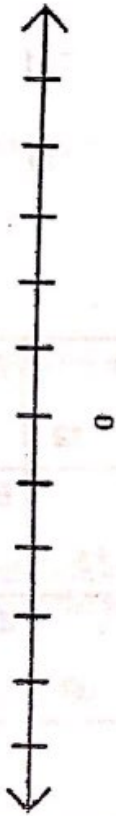


Situation & Number Line

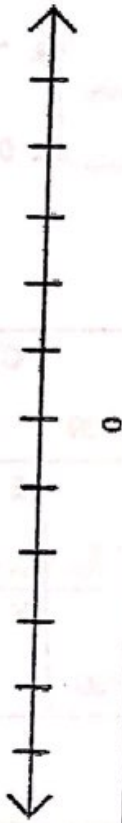
Integer

Illustration

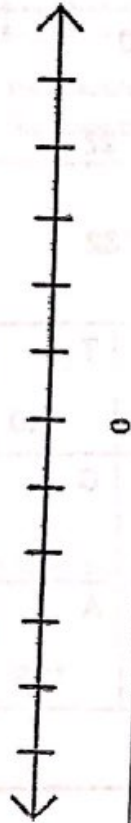
I gained 15 yards with that pass in football.



We lost 8 yards when our quarterback was sacked.



The lowest elevation is Death Valley, which is 282 feet below sea level.



The highest elevation in North America is Mt. McKinley, which is 20,320 feet above sea level.



Name \_\_\_\_\_

# Enrichment Worksheet for 58 - 59

What does a boa constrictor order at an ice-cream shop?

Follow the steps to find the answer.

1. Circle the greatest number in each exercise.
2. Cross out each box below that contains a circled number.
3. Read the answer using the letters in the remaining boxes.

- |         |     |     |         |     |     |
|---------|-----|-----|---------|-----|-----|
| 1. +5   | +3  | +4  | 2. -8   | -3  | -6  |
| 3. +3   | -4  | -5  | 4. +2   | -6  | 0   |
| 5. -12  | +8  | +4  | 6. -15  | 0   | -8  |
| 7. +20  | +24 | -25 | 8. -25  | -24 | -23 |
| 9. +36  | +39 | +32 | 10. -31 | -42 | -37 |
| 11. -18 | +18 | 0   | 12. +12 | -16 | -35 |
| 13. +40 | +36 | +29 | 14. -25 | -16 | -23 |
| 15. -15 | +13 | 0   | 16. -36 | -30 | -41 |
| 17. -36 | -45 | -27 | 18. 0   | -48 | +27 |
| 19. -46 | -35 | -32 |         |     |     |

B	A	T	T	E	S	C	N	O	A
+3	-8	+24	+40	0	-39	-16	-35	+12	-27
D	E	A	C	K	R	E	O	K	E
-23	+27	-25	-3	-45	+8	-48	+18	+5	-30
S	T	H	A	I	N	K	M	O	E
-15	+2	-41	+36	-31	+39	-15	+13	-32	+29

Answer \_\_\_\_\_



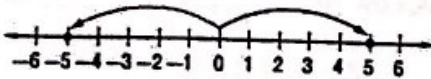
# Lesson 2: Absolute Value

- The distance between a number and 0 on the number line is called the \_\_\_\_\_
- \_\_\_\_\_ are numbers that are the same distance from zero in opposite directions.

Find the opposite of  $-5$ .

**Method 1** Use a number line.

Draw a number line and graph  $-5$ .



$-5$  is 5 units to the left of 0. The integer 5 is 5 units to the right of 0.

So, 5 is the opposite of  $-5$ .

**Method 2** Use symbols.

The integer  $-5$  uses the negative symbol.

The opposite of a negative symbol is a positive symbol.

So, the opposite of  $-5$  is  $+5$ , or 5.

**Try Some On Your Own:**

**Example 1:** What is the opposite of  $-16$ ?

**Example 2:** What is the opposite of 12?

**Example 3:** What is the opposite of 1?

some on your own:

**Example 1:** Evaluate  $| -3 |$

**Example 2:** Evaluate  $| -3 | + | 2 |$

**Example 3:** Evaluate  $| -6 | - | 3 |$

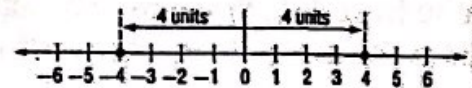
**Example 4:** Scuttle is flying 35 feet above sea level. Ariel is swimming 15 feet below sea level. What is the distance between Ariel and Scuttle?



## Absolute Value

**Words** The absolute value of a number is the distance between the number and zero on a number line.

**Model**



**Symbols**  $|4| = 4$  The absolute value of 4 is 4.  
 $|-4| = 4$  The absolute value of  $-4$  is 4.

1 The changes in population for four towns in the last year are listed below.

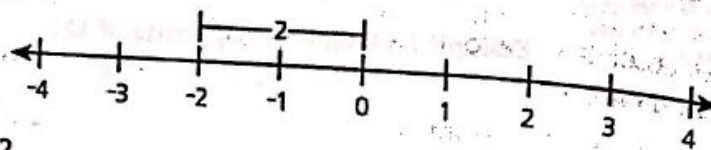
Springdale: -312; Lincoln: 284; Oakwood: -150; Newtowne: 75

Find the absolute value of the change in population for each town in the last year.

Springdale \_\_\_\_\_ Oakwood \_\_\_\_\_

Lincoln \_\_\_\_\_ Newtowne \_\_\_\_\_

2 Which statement is modeled by this number line?



A  $-2 = 2$

B  $|2| = 2$

C  $|2| = -2$

D  $|-2| = 2$

3 Malik threw a round flying disk forward. Because of a strong wind, the disk landed 10 feet behind him. Which absolute value statement can be used to model the distance the flying disk traveled?

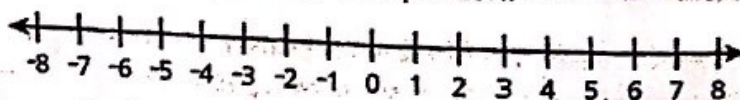
A  $|10| = -10$

B  $|-10| = 10$

C  $|-10| = -10$

D  $-|10| = 10$

4 Use this number line to help answer the question.



Which numbers have an absolute value of 7?

A 7 only

B -7 only

C 7 and -7

D 0, 7, and -7

5 Which statement is true?

A  $-|6| = -6$

B  $-|-3| = 3$

C  $|-7| = -7$

D  $-|-9| = 9$

7



1 Bianca wrote the expression  $-|6|$ .

Part A What is the value of the expression?

Answer \_\_\_\_\_

Part B How does  $-|6|$  compare to  $-6$ ? Explain.

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2 Write each of the following absolute values in the correct box below.

$|6|, |4|, |-5|, |-8|, |9|, |-1|, |5|, |-3|, |-11|, |10|$

Greater Than 5	Equal To 5	Less Than 5

3 Lily monitored how the temperature changed between 10:00 A.M. and 12 noon each day for a week.

Day of the Week	Daily Temperature Change ( $^{\circ}\text{F}$ )	Absolute Value of Daily Change
Monday	+3	
Tuesday	-6	
Wednesday	+9	
Thursday	-4	
Friday	-2	
Saturday	+5	
Sunday	+12	

4 Which of the following statements are true?

A  $-|8| = -8$

B  $-|9| = 9$

C  $|2| = |-2|$

D  $-|10| = |10|$

E  $|-12| = -12$

F  $-|20| = -20$

G  $|-17| = -17$

H  $-|15| = |-15|$

Part A What is the absolute value of each daily change? Fill in the column in the table above.

Part B Order the changes in temperature as absolute values from least to greatest.

Answer \_\_\_\_\_

8



**Absolute Value in Word Problems - Matching Worksheet**

Match the word problems to their answers. Write the letter of the answer that matches the problem.

- \_\_\_\_\_ 1. Spencer has a bank account with a balance of \$75.00. Spencer owes \$30.00 to her credit card and she owes \$50.00 for a LCD TV. What would Spencer's bank balance be, if both debits were paid? a. \$18.50
- \_\_\_\_\_ 2. Ruiz wants to buy a coffee machine that costs \$45.00. How much would the cashier give Ruiz if she gives the cashier a \$100 bill? b. -\$7
- \_\_\_\_\_ 3. Last Wednesday, Bradley had \$15. Over the weekend he received \$25 for gardening. How much does Bradley have now? c. -\$5
- \_\_\_\_\_ 4. William went to the shop with \$20.00. He bought a bag, water bottle and shirt. He came home with \$1.50. How much money did he spend? d. \$40
- \_\_\_\_\_ 5. Riley's mom has asked him to go to the supermarket and buy food for dinner. She has given Riley \$25. Riley spends \$11.00 for ham, \$5.00 for lettuce, \$8.00 for one bag of mushrooms and \$5.00 for ice cream. How much money is Riley short? e. -\$4
- \_\_\_\_\_ 6. Elliott buys a pizza slice for \$12, French Fries for \$15, and a cheese burger for \$20. She paid that amount with her credit card. Elliott has a bank account with a balance of \$40. What would Elliott's bank balance be, if all debits were paid? f. -\$10
- \_\_\_\_\_ 7. Hot dogs are \$10.00, orange drinks are \$20.00, chips are \$25.00, and popcorn is \$20.00. Austin bought two hot dogs, a bag of popcorn, and an orange drink. Austin's bank account balance is \$50. What would his balance be after paying all these expenses? g. \$55

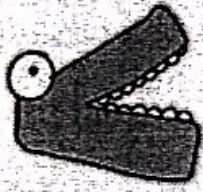




# Lesson 3: Ordering and Comparing Integers



greater than



less than



equal to

## Vocabulary:

\_\_\_\_\_ is a mathematical sentence indicating that 2 quantities are not equal

Draw Number Line Here:

### Examples:

1.  $-3$        $-5$

2.  $-5$        $0$

3.  $6$        $-1$

4.  $12$        $-11$

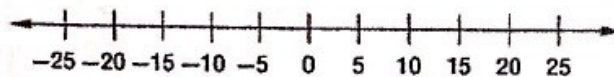
5.  $-1$        $0$

6.  $-2$        $-3$

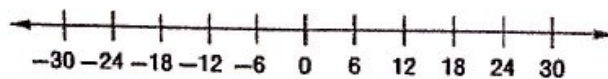
7. Justin has a score of  $-4$  on the Trueville Trivia Game. Desiree has a score of  $-5$ . Write an inequality to compare their scores.

8. The temperature on Tuesday was  $2$  degrees. The temperature on Wednesday was  $-2$  degrees. Write an inequality to compare the temperatures.

9. e. Order the set  $\{-4, 3, 11, -25\}$  from greatest to least.



f. Order the set  $\{-18, 30, 12, -6, 3\}$  from least to greatest.



Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Practice: Comparing and Ordering Integers

<p>#1 Compare the pair of numbers using <math>&lt;</math>, <math>&gt;</math> or <math>=</math></p> <p><b>-56 _____ -57</b></p>	<p>#2 Compare the pair of numbers using <math>&lt;</math>, <math>&gt;</math> or <math>=</math></p> <p><b>-34 _____ -30</b></p>
<p>#3 Compare the pair of numbers using <math>&lt;</math>, <math>&gt;</math> or <math>=</math></p> <p><b>-26 _____ -87</b></p>	<p>#4 Compare the pair of numbers using <math>&lt;</math>, <math>&gt;</math> or <math>=</math></p> <p><b>-900 _____ -800</b></p>
<p>#5 Order from least to greatest: <b>15, -16, -18, 19, -20</b></p>	<p>#6 Order from least to greatest: <b>-35, -50, 76, -76, 100</b></p>
<p>#8 Mrs. Carroll's class was playing a game where each group started at -500 and earned points to try to get to zero first. Team A had -450 points, Team B had -360 points and Team C had -380 points. Which team came the closest to winning?</p>	



① Comparing and ordering numbers can help you understand situations in real life.

➤ A group of people from cities around the United States recorded the high temperature in degrees Celsius ( $^{\circ}\text{C}$ ) on one day. The high temperatures are listed below.

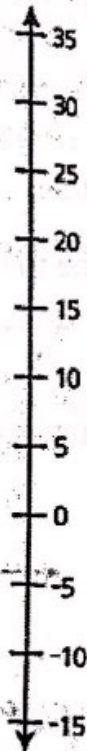
- Portland:  $15^{\circ}\text{C}$
- Minneapolis:  $-2^{\circ}\text{C}$
- Boston:  $3^{\circ}\text{C}$
- New York:  $6^{\circ}\text{C}$
- Salt Lake City:  $-8^{\circ}\text{C}$
- Cleveland:  $4^{\circ}\text{C}$
- Dallas:  $22^{\circ}\text{C}$
- Denver:  $-3^{\circ}\text{C}$
- Chicago:  $-12^{\circ}\text{C}$
- Miami:  $34^{\circ}\text{C}$
- Buffalo:  $0^{\circ}\text{C}$
- Philadelphia:  $1^{\circ}\text{C}$

How can you plot the temperatures on the number line at the right?

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Plot and label the values on the number line.

Compare the temperatures in Buffalo and Boston using the  $<$  symbol.

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Compare the temperatures in Denver and Buffalo using the  $<$  symbol.

---

Compare the temperatures in Denver, Boston, and Buffalo using the  $<$  symbol.

---

Order the temperatures from least to greatest. \_\_\_\_\_

② A local flower shop recorded profits and losses for each month during the year. The numbers are listed in the table.

Month	Profit or Loss	Month	Profit or Loss
January	\$180	July	-\$410
February	\$460	August	\$240
March	-\$250	September	\$525
April	-\$575	October	-\$390
May	\$331	November	-\$108
June	\$585	December	\$260

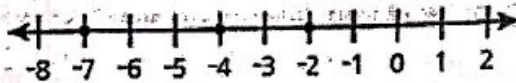
Which type of numbers shows a loss for the month? \_\_\_\_\_

Which type of numbers shows a profit for the month? \_\_\_\_\_

1 Abby scored -4 in a game. Trudy scored 3, Melanie scored -5, and Gia scored -2. Who received the score with the lowest value?

- A Abby
- B Trudy
- C Melanie
- D Gia

Use this number line to help answer the question.



2 Which inequality statement is true?

- A  $-7 < -4 < -2$
- B  $-7 > -4 > -2$
- C  $-4 < -7 < -2$
- D  $-4 > -7 > -2$

3 The temperature at 1:00 was  $-7^\circ$ . At 4:00, it was  $-12^\circ$ . At 6:00, it was  $-9^\circ$ . Which statement is true?

- A It was warmer at 1:00 than at 4:00.
- B It was warmer at 4:00 than at 6:00.
- C It was colder at 1:00 than at 4:00.
- D It was colder at 6:00 than at 4:00.

4 Which sets of integers are ordered from least to greatest? Select all that apply.

- A -5, 4, -3, 1, 0
- B 0, -1, 3, -4, 6
- C 7, 4, 0, -3, -5
- D -1, 0, 2, 5, 8
- E 5, 4, -3, -6, -9
- F -8, -7, 0, 2, 5

5 Write the following numbers in their proper places in the table below.

-5   -12   7   0

6   3   -1   -4

Greater Than -3	Less Than -3

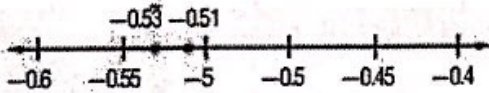


# Lesson 5: Compare and Order Rational Numbers

any number that can be written as a fraction

$-0.51$    $\frac{8}{15}$

Rename  $\frac{8}{15}$  as a decimal. Then graph both decimals on a number line.

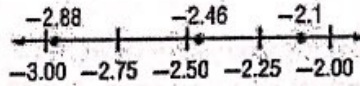


$\frac{8}{15} = -0.5\bar{3}$

Order the set  $\{-2.46, -2\frac{22}{25}, -2\frac{1}{10}\}$  from least to greatest

Write  $-2\frac{22}{25}$  and  $-2\frac{1}{10}$  as decimals to the hundredths place

$-2\frac{22}{25} = -2.88$       $-2\frac{1}{10} = -2.1$



Graph the decimals on the number line.

Since  $-0.51$  is to the right of  $-0.5\bar{3}$  on the number line,  
 $-0.51 > \frac{8}{15}$ .

From least to greatest, the order is  $-2\frac{22}{25}$ ,  $-2.46$ , and  $-2\frac{1}{10}$

**Got It?** Do these problems to find out.

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

e.  $-3\frac{5}{8}$    $-3.625$

f.  $\frac{3}{7}$    $0.413$

g. Order the set  $\{-7\frac{13}{20}, -7.78, -7\frac{17}{100}\}$  from greatest to least.

Fill in each  with  $<$ ,  $>$ , or  $=$  to make a true statement. (Examples 1-4)

1.  $9.7$    $-10.3$

2.  $\frac{5}{8}$    $-\frac{3}{8}$

3.  $-6.7$    $-6\frac{7}{10}$

4.  $-\frac{5}{6}$    $-0.94$

Show your work →

Order the following sets of numbers from least to greatest. (Example 5)

5.  $\{-3\frac{1}{3}, 3.3, -3\frac{3}{4}, 3.5\}$  \_\_\_\_\_

6.  $\{2.\bar{1}, -2.1, 2\frac{1}{11}, -2\}$  \_\_\_\_\_

**Financial Literacy** Steve recorded these amounts in his checkbook:  $-\$6.50$ ,  $\$7.00$ ,  $-\$6.75$ , and  $\$7.25$ .

Order these amounts from least to greatest. (Example 6)

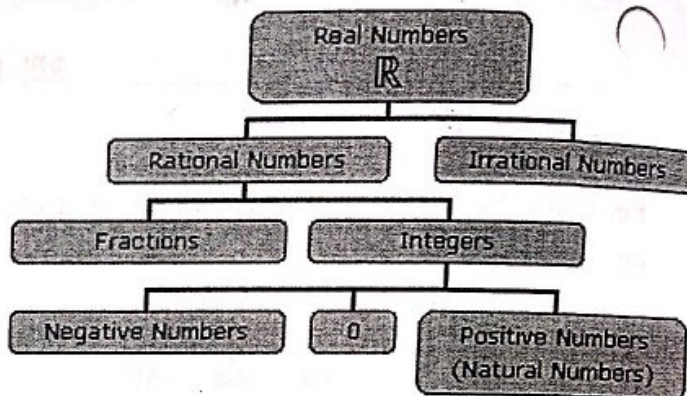
# Lesson 4: Terminating and Repeating Decimals

any number that can be written as a fraction

the decimal form of a rational number which has a repeating digit of zero

the decimal form of a rational number (example: 0.33333....)

when a bar is placed over the digits that repeat



$$\begin{array}{r}
 6 \leftarrow \text{quotient} \\
 4 \overline{) 24} \leftarrow \text{dividend} \\
 \downarrow \\
 \text{divisor}
 \end{array}$$

Ex 1: Write  $5/12$  as a decimal

Ex 2: Write  $1/6$  as a decimal

$$\begin{array}{r}
 35 \\
 \hline
 5 = 7 \\
 \hline
 \end{array}$$

→ Dividenda  
 → Quotient  
 → Divisor

Ex 3: Write  $8/9$  as a decimal

Ex 4: Write  $-1/4$  as a decimal

Ex 5: Write  $-2 \frac{1}{6}$  as a decimal

Ex 6: Write  $-0.8$  as a fraction

Ex 7: Write  $-0.65$  as a fraction

Ex 8: Write  $-7.75$  as a fraction

Ex 9: Write  $12.54$  as a fraction

Ex 10: Write  $-6.3$  as a fraction

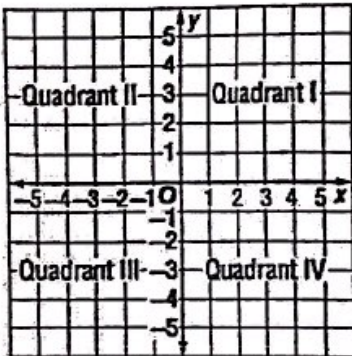


# Lesson 6: The Coordinate Plane

is formed when the x-axis and the y-axis intersect at their zero points

is the point on the coordinate plane where the x-axis and y-axis intersect

the four separate regions on a coordinate plane (these are marked using roman numerals)



Quadrant	x-coordinate	y-coordinate	Example
I	positive	positive	(2, 5)
II	negative	positive	(-2, 5)
III	negative	negative	(-2, -5)
IV	positive	negative	(2, -5)

Identify the ordered pair that names each point. Then identify the quadrant in which it is located.

19. U

\_\_\_\_\_

20. D

\_\_\_\_\_

21. S

\_\_\_\_\_

22. P

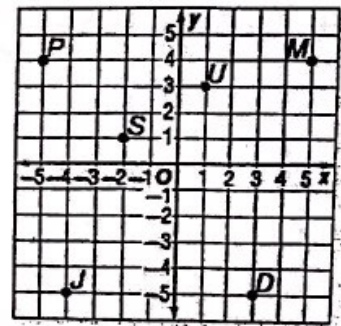
\_\_\_\_\_

23. J

\_\_\_\_\_

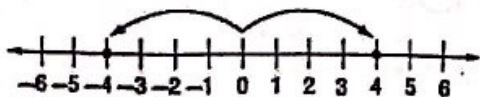
24. M

\_\_\_\_\_

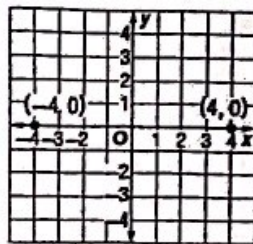


You can use what you know about number lines and opposites to compare locations on the coordinate plane. Consider the number line and coordinate plane below.

The number line shows that -4 and 4 are opposites.



The coordinate plane shows that the points  $(-4, 0)$  and  $(4, 0)$  are the same distance from the y-axis in opposite directions. So, they are reflected across the y-axis. Notice that the y-coordinates did not change and that the x-coordinates are opposites.



Reflections:

1. U \_\_\_\_\_

2. D \_\_\_\_\_

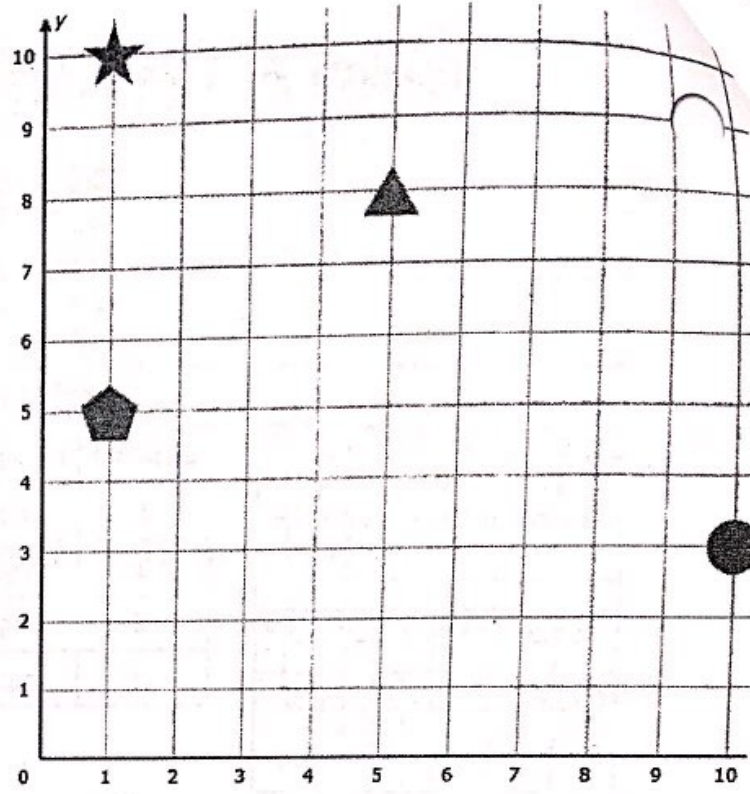
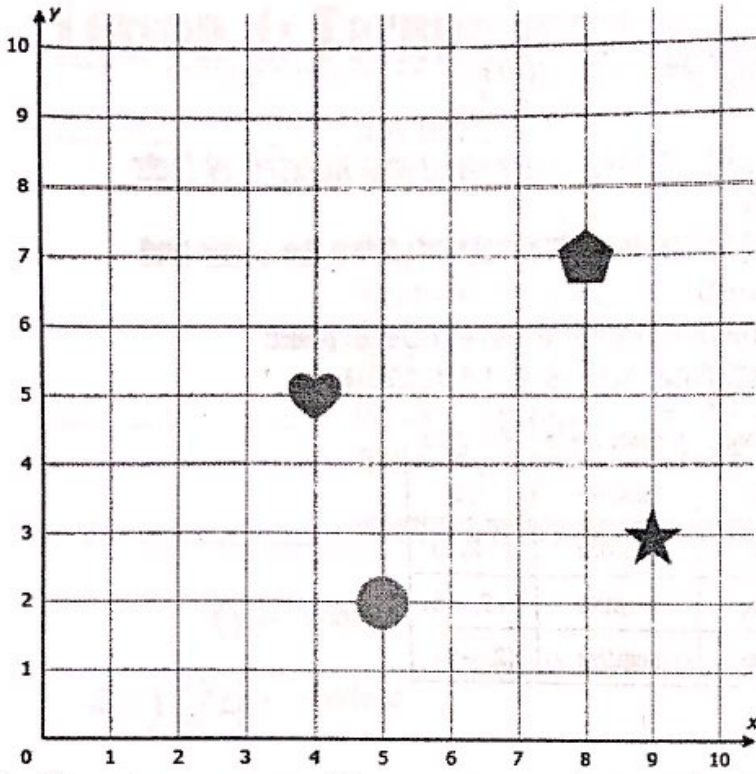
3. S \_\_\_\_\_

4. P \_\_\_\_\_

5. J \_\_\_\_\_

6. M \_\_\_\_\_





What are the coordinates

of the shapes?

♡ :

★ :

◇ :

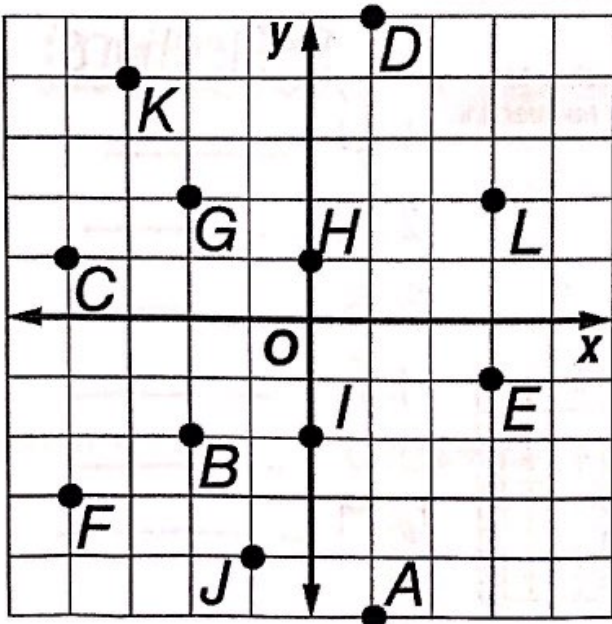
△ :

☆ :

◇ :

○ :

○ :



A :

G :

B :

H :

C :

I :

D :

J :

E :

K :

F :

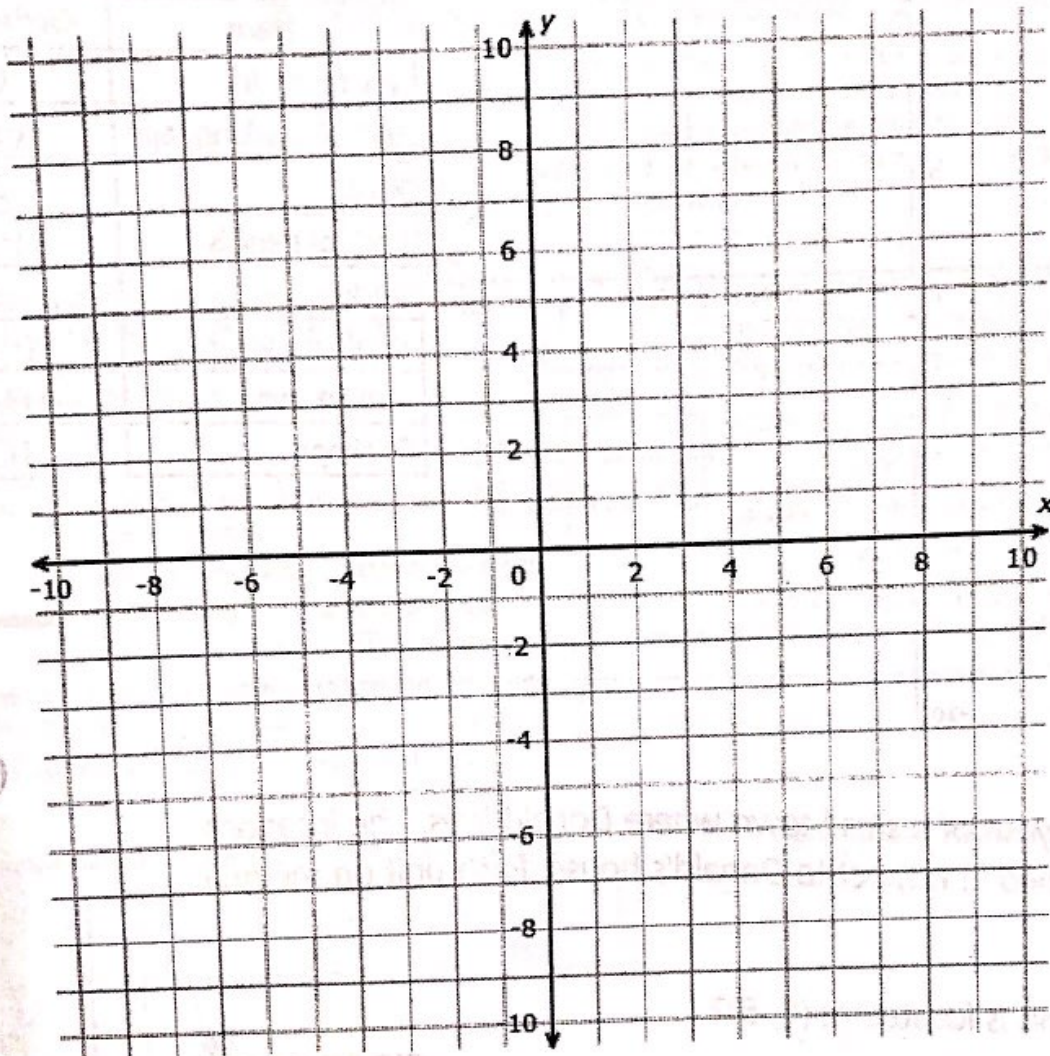
L :

(17)



# Lesson 7: Graphing On The Coordinate Plane

Ordered Pairs correspond to a point on a coordinate plane. These are written in the form of  $(x,y)$

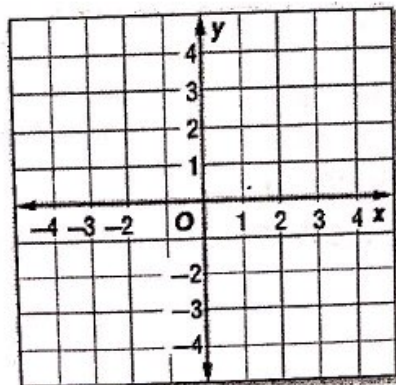


Graph The Following Points on the Coordinate Plane to the Left:

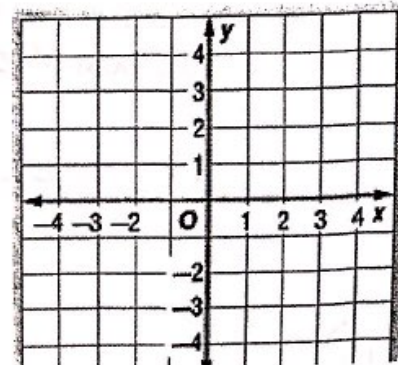
- A:  $(0,0)$
- B:  $(10, 8)$
- C:  $(-8, 9)$
- D:  $(-2, -4)$
- E:  $(6, -5)$
- F:  $(4, 7)$
- G:  $(-2, 2)$
- H:  $(-5, -2)$
- I:  $(2, -10)$
- J:  $(10, 0)$
- K:  $(0, -5)$
- L:  $(0, 7)$
- M:  $(-5, 0)$

Graph and label each point on the coordinate plane below.

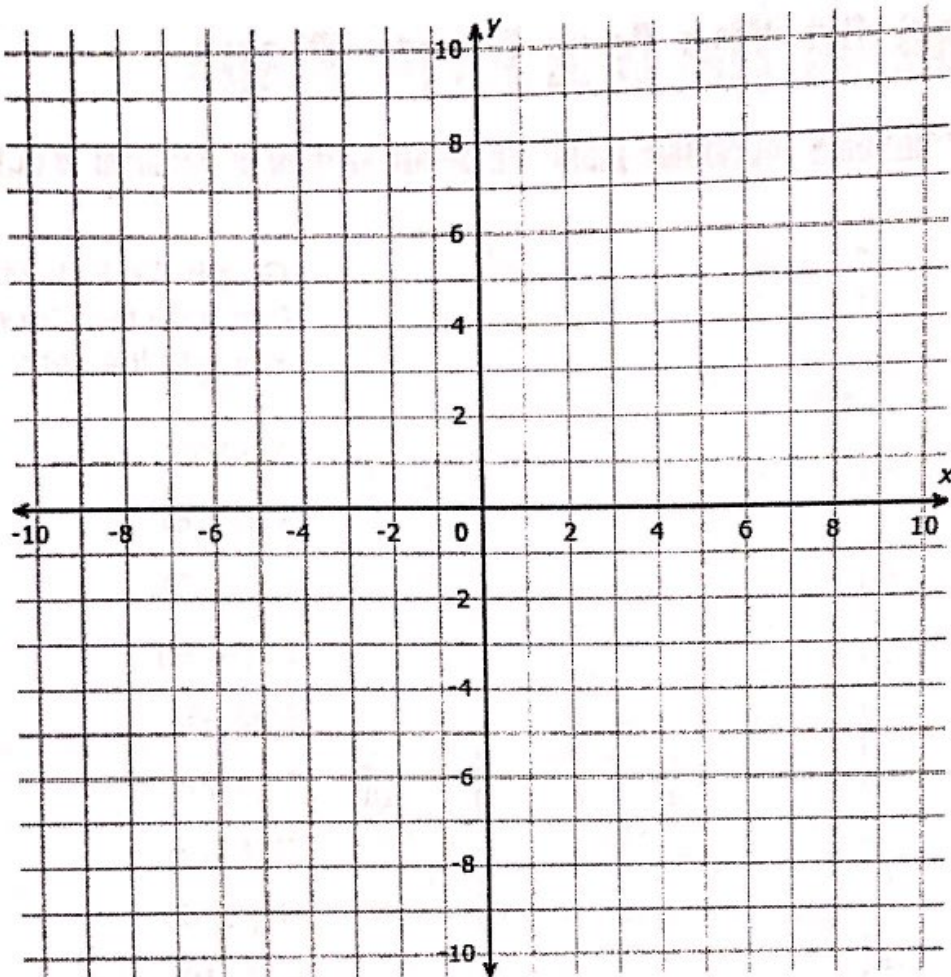
- a.  $P(-2, 4)$
- b.  $Q(0, -4)$
- c.  $R(-\frac{1}{2}, -2\frac{1}{2})$
- d.  $S(4.5, 1)$



- e. Graph  $C(-1, -5)$ . Then graph its reflection across the x-axis.
- f. Graph  $D(2, 3\frac{1}{2})$ . Then graph its reflection across the y-axis.







Item	Ordered P
Toy football	(1, 7)
Roll of masking tape	(-3, -3)
Ruler	(3, 3)
Pack of pencils	(-1, 7)
Rock	(-3, 3)
Bottle of water	(-1, -7)
Rubber band	(3, -3)
Envelope	(1, -7)

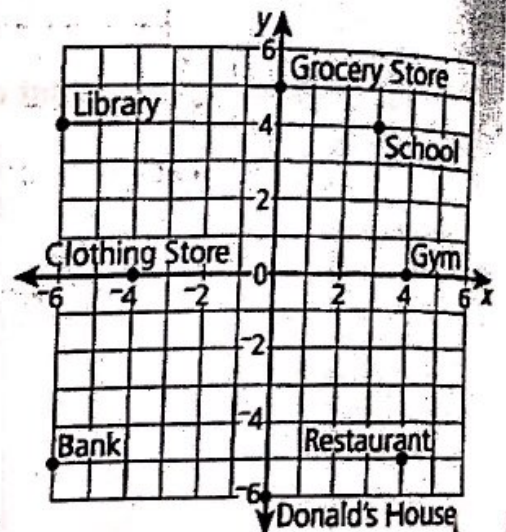
The map shows the layout of a small town where Donald lives. The locations of buildings are described in respect to Donald's house. Each unit on the grid represents one block.

**Part A** Which building is located at (0, 5)?

Answer \_\_\_\_\_

**Part B** The post office is located at a point that is a reflection of the location of the library across the y-axis. What ordered pair describes the location of the post office?

Answer \_\_\_\_\_





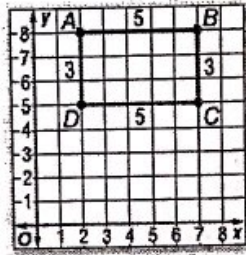
# Lesson 8: Polygons On The Coordinate Plane

Ordered Pairs correspond to a point on a coordinate plane. These are written in the form of  $(x,y)$

## Find Perimeter

You can use the coordinates of a figure to find its dimensions by finding the distance between two points. To find the distance between two points with the same x-coordinates, subtract their y-coordinates. To find the distance between two points with the same y-coordinates, subtract their x-coordinates.

A rectangle has vertices  $A(2, 8)$ ,  $B(7, 8)$ ,  $C(7, 5)$ , and  $D(2, 5)$ . Use the coordinates to find the length of each side. Then find the perimeter of the rectangle.



**Width:** Find the length of the horizontal lines.

$\overline{AB}$  is 5 units long.  $\overline{CD}$  is 5 units long.

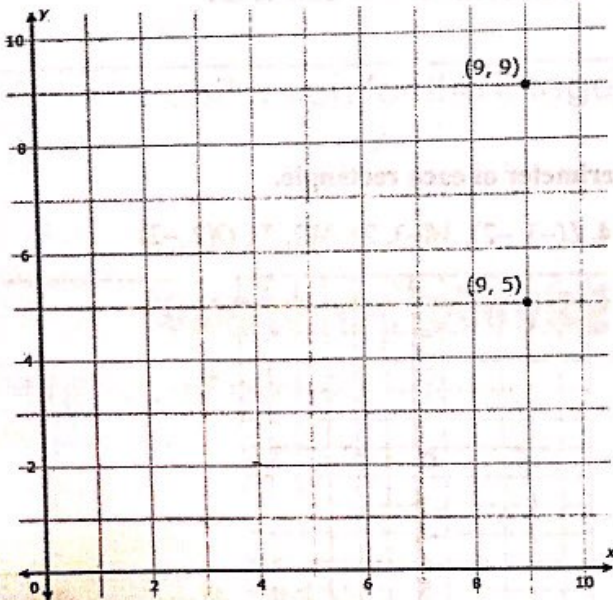
**Length:** Find the length of the vertical lines.

$\overline{BC}$  is 3 units long.  $\overline{DA}$  is 3 units long.

Add the lengths of each side to find the perimeter.  
 $5 + 5 + 3 + 3 = 16$  units

So, rectangle ABCD has a perimeter of 16 units.

Find the distance between the points  $(9, 9)$  and  $(9, 5)$ .



Rectangle ABCD has vertices  $A(2, 1)$ ,  $B(2, 5)$ ,  $C(4, 5)$ , and  $D(4, 1)$ . Use the coordinates to find the length of each side. Then find the perimeter of the rectangle.

**Width:** Subtract y-coordinates.

$$AB: 5 - 1 = 4 \text{ units} \quad CD: 5 - 1 = 4 \text{ units}$$

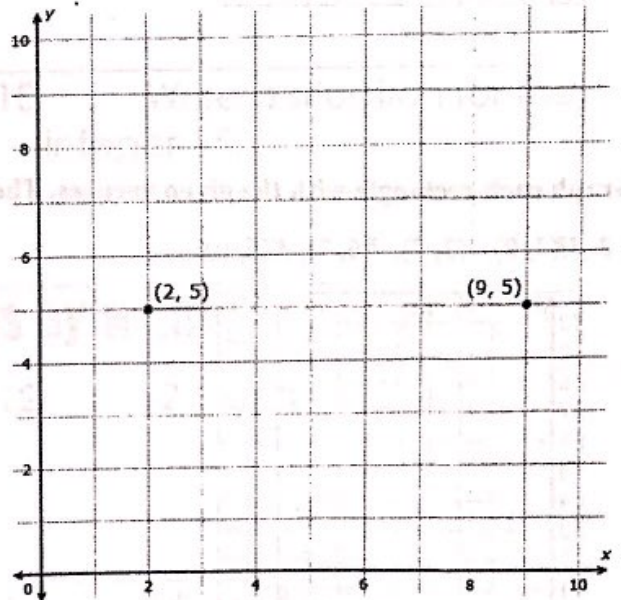
**Length:** Subtract x-coordinates.

$$AD: 4 - 2 = 2 \text{ units} \quad BC: 4 - 2 = 2 \text{ units}$$

Add the lengths of each side to find the perimeter.

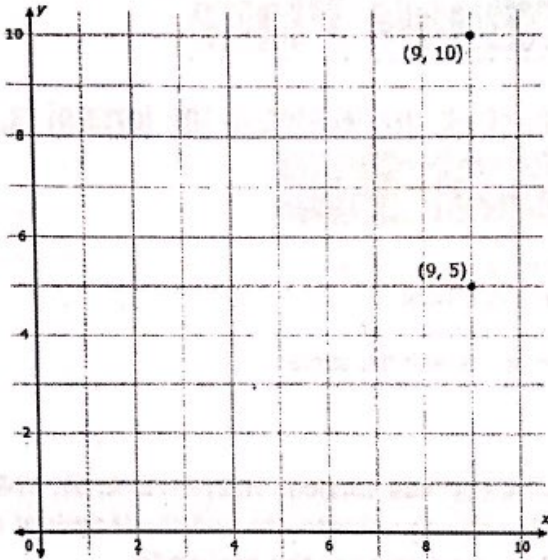
$$4 + 2 + 4 + 2 = 12 \text{ units}$$

Find the distance between the points  $(2, 5)$  and  $(9, 5)$ .



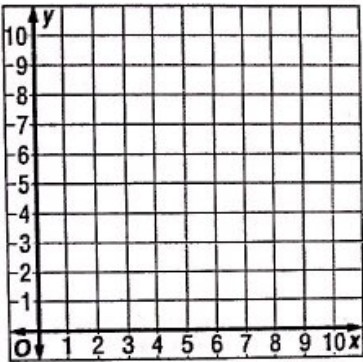


Find the distance between the points (9, 10) and (9, 5).

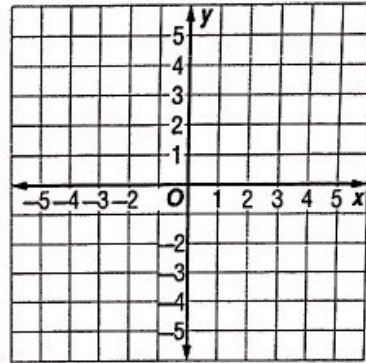


Graph each figure and classify it. Then find the area.

1.  $A(3, 6)$ ,  $B(9, 3)$ ,  $C(5, 3)$

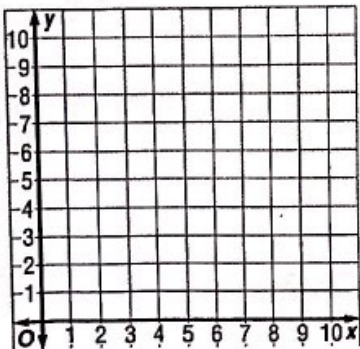


2.  $D(-1, -1)$ ,  $E(-1, 3)$ ,  $F(2, 4)$ ,  $G(2, -3)$

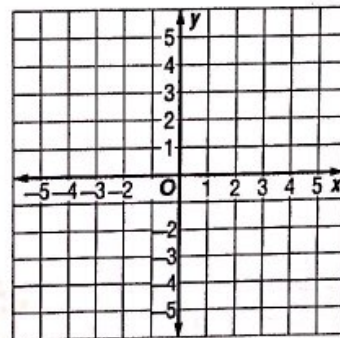


Graph each rectangle with the given vertices. Then find the perimeter of each rectangle.

3.  $H(3, 0)$ ,  $I(3, 7)$ ,  $J(6, 7)$ ,  $K(6, 0)$



4.  $L(-3, -2)$ ,  $M(-3, 2)$ ,  $N(2, 2)$ ,  $O(2, -2)$





# Unit 7: Integers Study Guide

Name:

Period:

1. What is the opposite of the integer  $-16$ ?

2. What is the opposite of the integer  $-45$ ?

3. What is the opposite of the integer  $695$ ?

4. What is the opposite of the integer  $92.5$ ?

**Identify the integer that represents the situation and tell what zero means in that situation.**

5. A team loses 12 yards on a football play.

6. The peak of the mountain is at 4,300 ft above sea level.

7. Ms. Rankin withdraws \$50.75 from her bank account.

8. Mrs. Nessmith deposits \$85.99 into her bank account.

9. Write a situation for the integer  $-5$ .

10. Write a situation for the integer  $15$ .

**Compare the following integers by writing  $>$ ,  $<$ , or  $=$ .**

11.  $-17$  and  $-25$

12.  $-2.5$  and  $1.7$

13.  $-\frac{3}{4}$  and  $\frac{1}{4}$

14.  $\frac{1}{3}$  and  $0.7$

**Order the following numbers from least to greatest.**

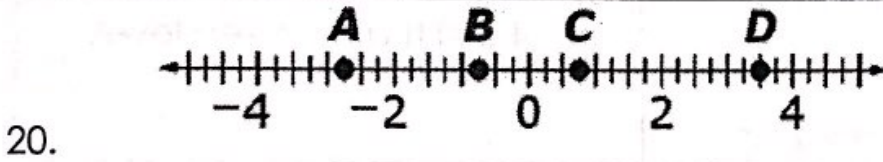
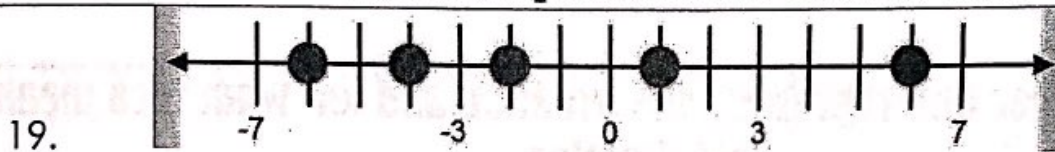
15.  $-2, 4, -10, 19, 0$

16.  $1/2, -6, 0.45, -12.5, -1/5$

17.  $-1/2, -2/3, 8, -1.5, 7.3$

18.  $-21, 30, 18, 5, -77, 125$

**Label the points on the number line.**



**Find the absolute value of the following questions.**

21.  $|6|$

22.  $|-36|$

23.  $-|25|$

24.  $|5| + |-9|$

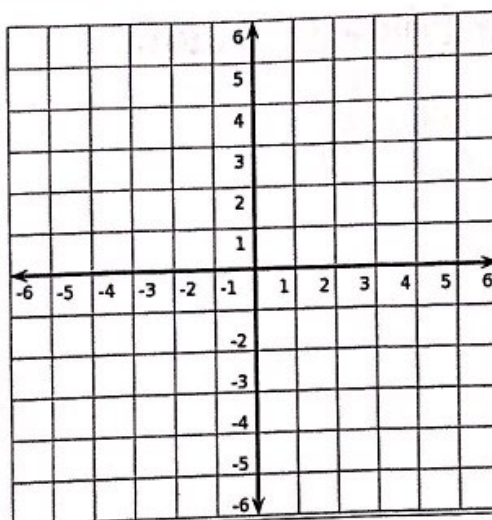
**Change the following fractions to decimals. "Put the top dog in the house"**

25.  $\frac{1}{9}$

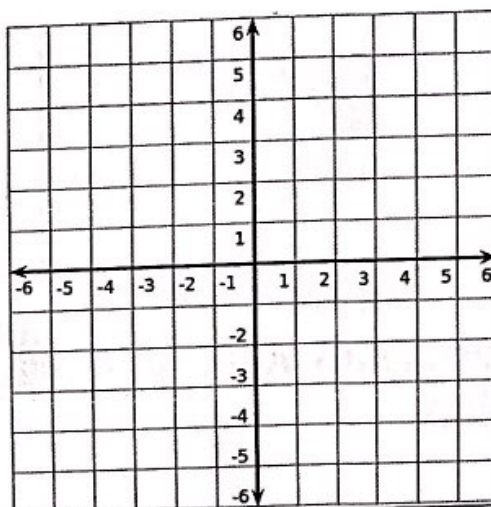
26.  $\frac{1}{6}$



27. Label the quadrants on the coordinate plane.



28. Label the origin, x-axis, and y-axis on the coordinate plane.



29. Plot and label the following points on the coordinate plane.

A: (3, 2)

B: (-6, 5)

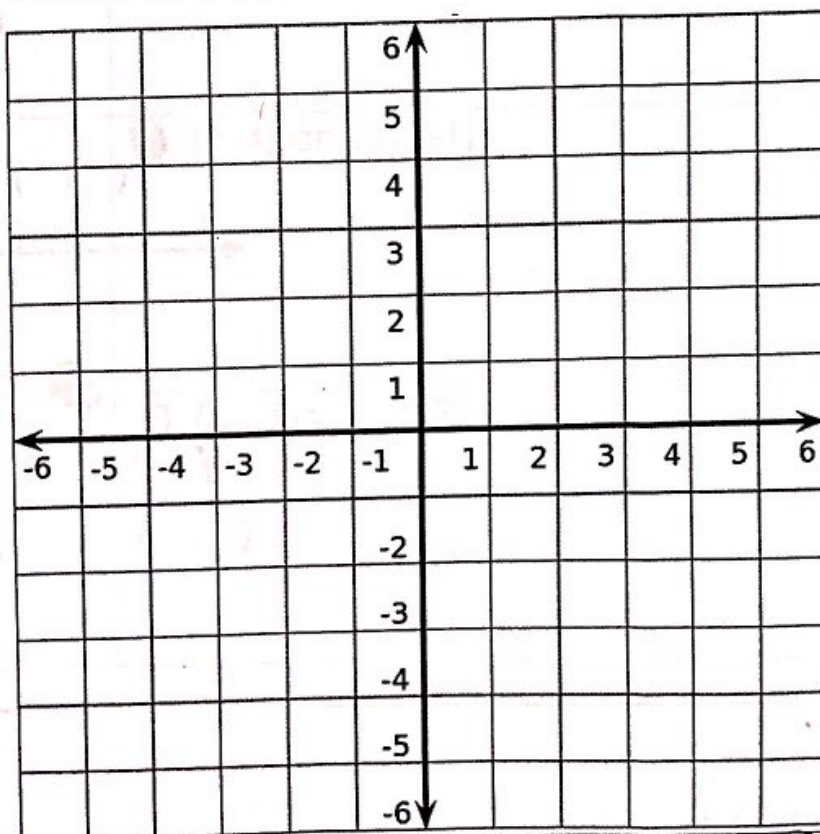
C: (-2, -5)

D: (4, -5)

E: (6, 5)

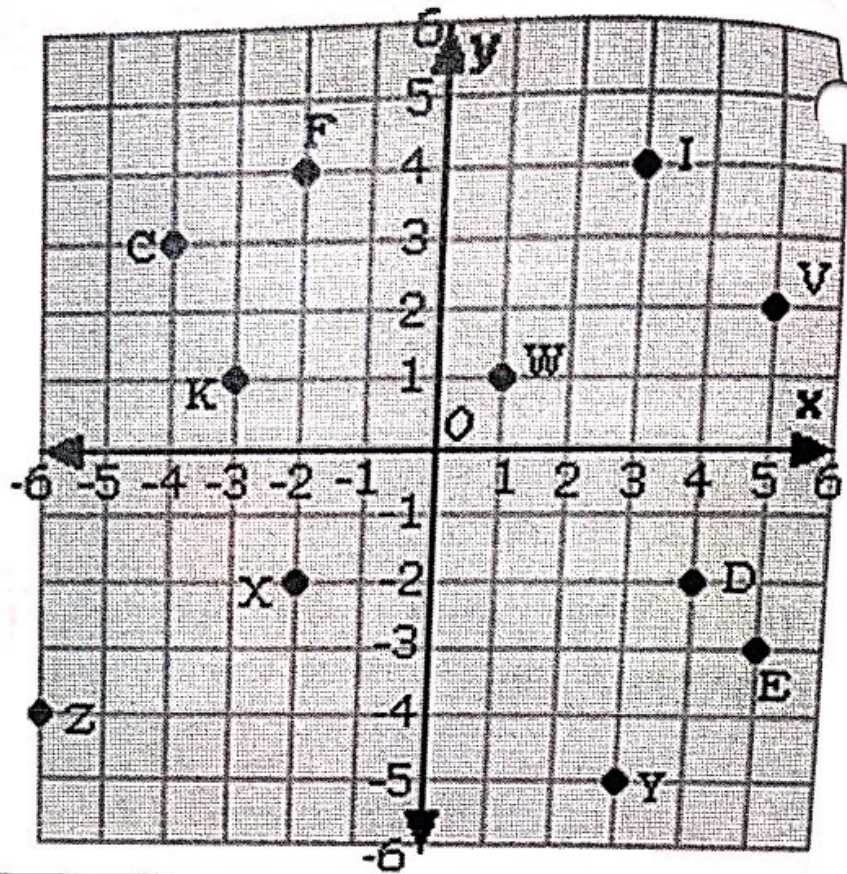
F: (0, -6)

G: (-4, 0)

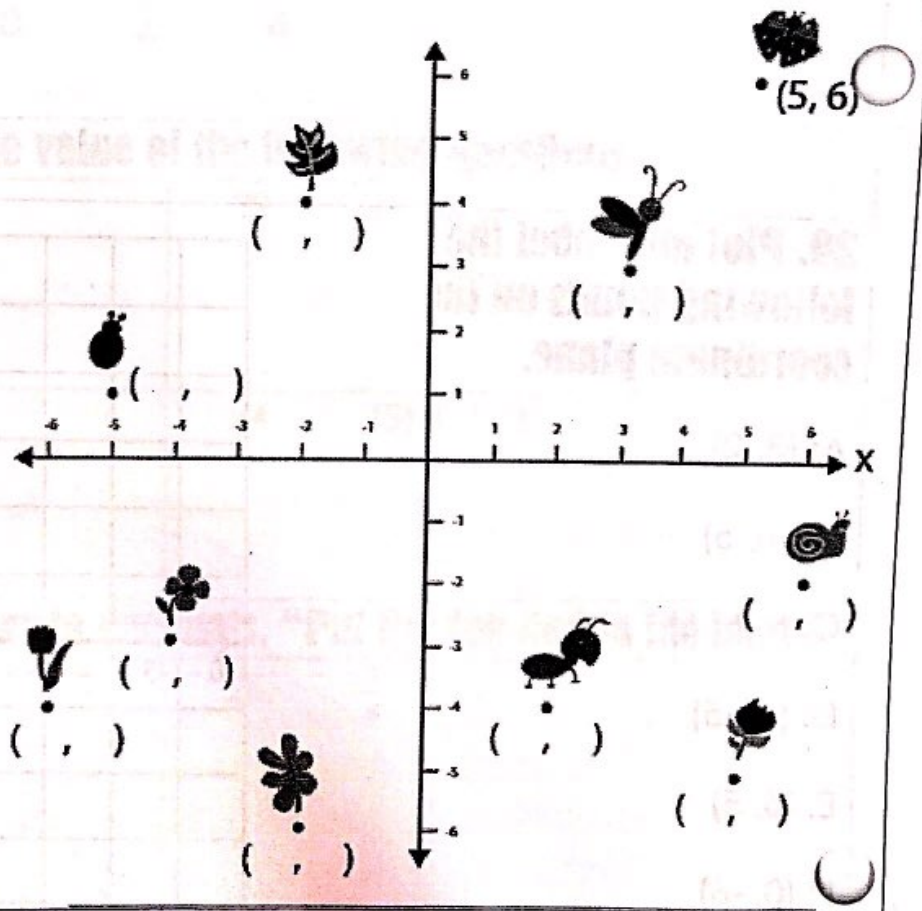




30. Write down the coordinates of the following points.



30. Write down the coordinates of the following points.





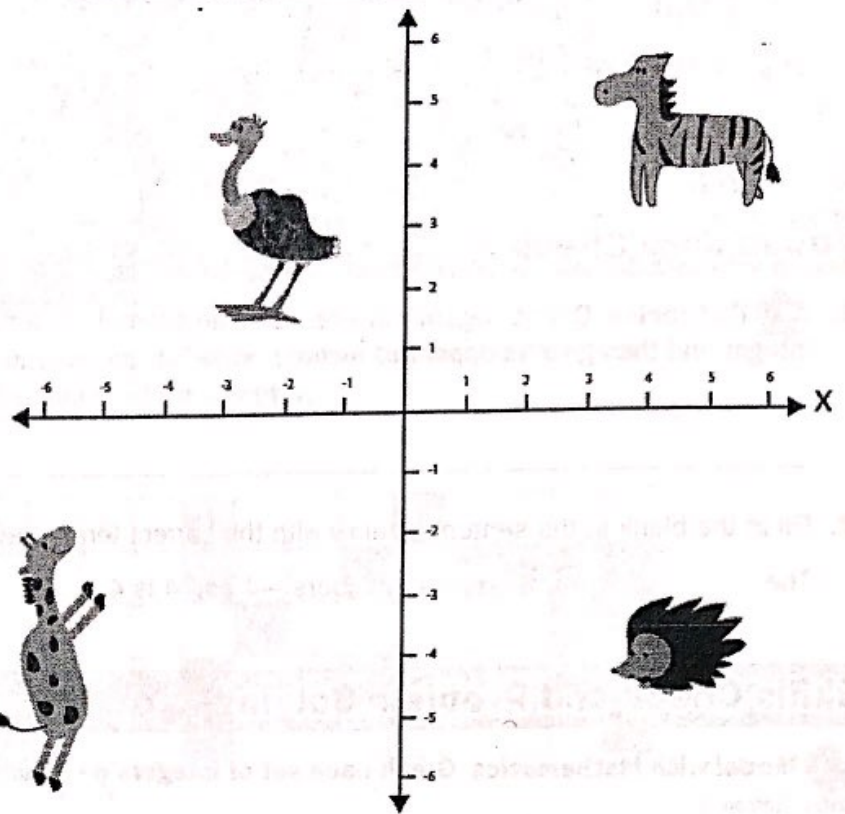
**31. Write down the quadrant number for each animal.**

**Zebra:**

**Ostrich:**

**Giraffe:**

**Porcupine:**



**Find the distance between the following points**

32. (3, 0) and (7, 0)

33. (-5, 4) and (5, 4)

34. (0, 7) and (0, -8)

36. (2, 4) and (2, -1)

37. (3, 4) and (-4, 4)

38. (7, 1) and (7, 9)



# Mid-Chapter Check

## Vocabulary Check



1. **CCPS Be Precise** Define *negative integer*. Give an example of a negative integer and then give its opposite. (Lesson 1)

\_\_\_\_\_

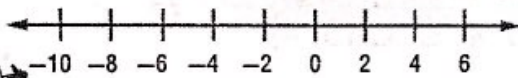
\_\_\_\_\_

2. Fill in the blank in the sentence below with the correct term. (Lesson 2)
- The \_\_\_\_\_ of the numbers  $-4$  and  $4$  is  $4$ .

## Skills Check and Problem Solving

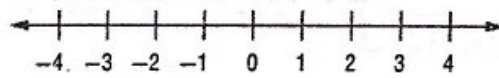
- CCPS Model with Mathematics** Graph each set of integers on a number line. (Lesson 1)

3.  $\{-4, -6, 0, 3\}$



Show your work.

4.  $\{2, -3, 1, -1\}$



- Evaluate each expression.** (Lesson 2)

5.  $|-12| = \underline{\hspace{2cm}}$       6.  $|-4| + |-10| = \underline{\hspace{2cm}}$       7.  $|9| + |-2| = \underline{\hspace{2cm}}$

8.  $|13| - |-5| = \underline{\hspace{2cm}}$       9.  $|-16| - |-2| = \underline{\hspace{2cm}}$       10.  $|-15| + |-7| = \underline{\hspace{2cm}}$

11. Hailey, Priya, and Shetal are auditioning for the same role. Hailey auditions at 10 minutes before four, Priya auditions 30 minutes before Hailey, and Shetal auditions at 5 minutes before four. Order the three by who will audition first. (Lesson 3) \_\_\_\_\_

12. **Georgia Test Practice** The table shows the overnight low temperatures for a four-day period. (Lesson 3)

Which list shows the temperatures from least to greatest?

- (A)  $-8, -11, 7, 18$       (C)  $-11, -8, 7, 18$   
 (B)  $7, -8, -11, 18$       (D)  $-11, 7, -8, 18$

Temperature ( $^{\circ}\text{F}$ )	
Thursday	$-8$
Friday	$7$
Saturday	$18$
Sunday	$-11$

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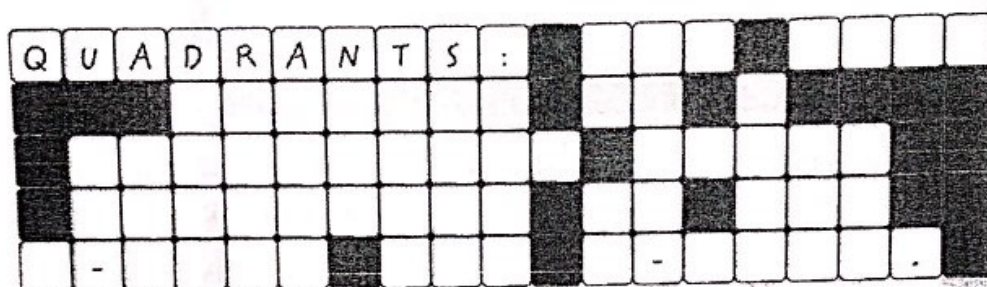




## Vocabulary Check



Complete the puzzle by unscrambling the letters below to reveal words from the vocabulary list at the beginning of the chapter.



~~Q~~ ~~U~~ ~~A~~ ~~D~~ ~~R~~ ~~A~~ ~~N~~ ~~T~~ ~~S~~ :    I    N    N  
 O   R   A   D   N   T   A   S   I   N   A   H   S  
 C   ~~A~~   O   ~~R~~   G   A   A   N   T   Y   H   E   T   F   E  
 X   ~~X~~   A   X   E   S   I   ~~T~~   ~~S~~   D   B   Y   L   A   N   E  
~~Q~~   S   E   P   R   R   I   O   E   D   E   T   P   A   X   I   O   U   R

Complete each sentence using the vocabulary list at the beginning of the chapter.

1. A \_\_\_\_\_ is a number that can be written as a fraction.
2. A number that is less than zero is a \_\_\_\_\_.
3. A number that is greater than zero is a \_\_\_\_\_.
4. The \_\_\_\_\_ of a number is the distance between the number and zero on a number line.
5. The division of a \_\_\_\_\_ ends.
6. A decimal whose digits repeat in groups of one or more is a \_\_\_\_\_.



## Key Concept Check

### Use Your **FOLDABLES**

Use your Foldable to help review the chapter.

Tape here

Compare and Order Numbers	Examples
	Examples
	Examples

### Got it?

Circle the correct term or number to complete each sentence.

1. The opposite of  $-4$  is  $(-4, 4)$ .
2. The distance of a number from 0 is its (opposite, absolute value).
3. The value listed first in an ordered pair is the (x-coordinate, y-coordinate).
4. The absolute value of 17 is  $(-17, 17)$ .
5.  $(1.\overline{25}, 6.543)$  is a terminating decimal.



# Problem Solving

1. Kirk bought songs for his MP3 player. He needed 6 more songs to have a total of 100. Write an integer to represent how many more songs Kirk needs. (Lesson 1)
- 

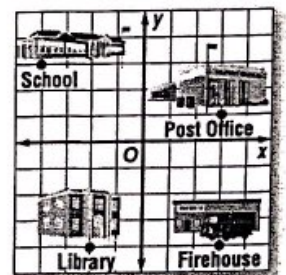
2. In a football game, the quarterback was tackled behind the line of scrimmage and lost 7 yards. Represent the loss of 7 yards as an integer. (Lesson 1)
- 

3. Kelsey's bank transactions are shown in the table. A positive number represents a deposit and a negative number represents a withdrawal. What is the absolute value of the transaction in Week 3? (Lesson 2)
- 

Week	Transaction
1	50
2	-15
3	-20
4	30

4. The high temperatures in a city during a 5 day period were  $-6^\circ$ ,  $8^\circ$ ,  $-2^\circ$ ,  $6^\circ$ , and  $11^\circ$ . Place the temperatures in order from least to greatest. (Lesson 3)
- 

5. **Use Math Tools** Refer to the diagram. Which building is located at  $(-2, -4)$ ? (Lesson 6)
- 



6. **Be Precise** Farah made 28 out of 84 shots on a goal in a recent hockey season. Write her shots made out of shots attempted as a decimal. (Lesson 4)
- 

7. The heights of the lifeguard chairs are  $66\frac{1}{3}$  inches and  $72\frac{5}{8}$  inches. One section of the lake has a depth of  $\frac{203}{4}$  inches, and another section has a depth of  $\frac{109}{2}$  inches. Represent each height and depth using a positive or negative number. Then order the numbers from least to greatest. (Lesson 5)
- 

30