Complete the warm up in the warm up section of your notebook:

Think about various careers and how they use mathematics. List these on your paper. List all the possible ways they may use mathematics.

2-1 Integers

Warm Up

Problem of the Day

Lesson Presentation

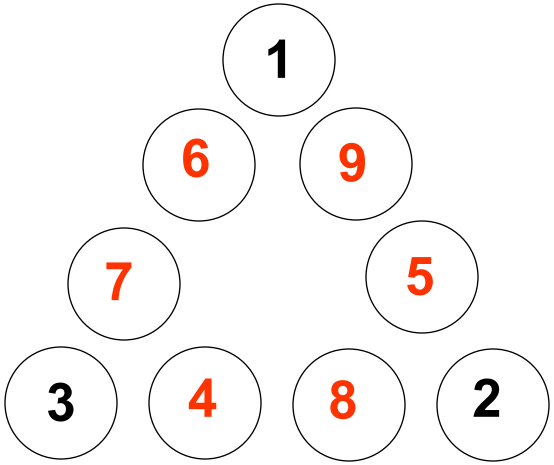
Warm Up

Compare. Use <, >, or =

1. 7 ▢ 5 >
2. 32 ▢ 65 <
3. 82 ▢ 28 >
4. 64 ▢ 48 >

Problem of the Day

Place 4, 5, 6, 7, 8, and 9 in the empty circles so that each side has the same sum.



2-1 Integers

Learn to compare and order integers and to determine absolute value.

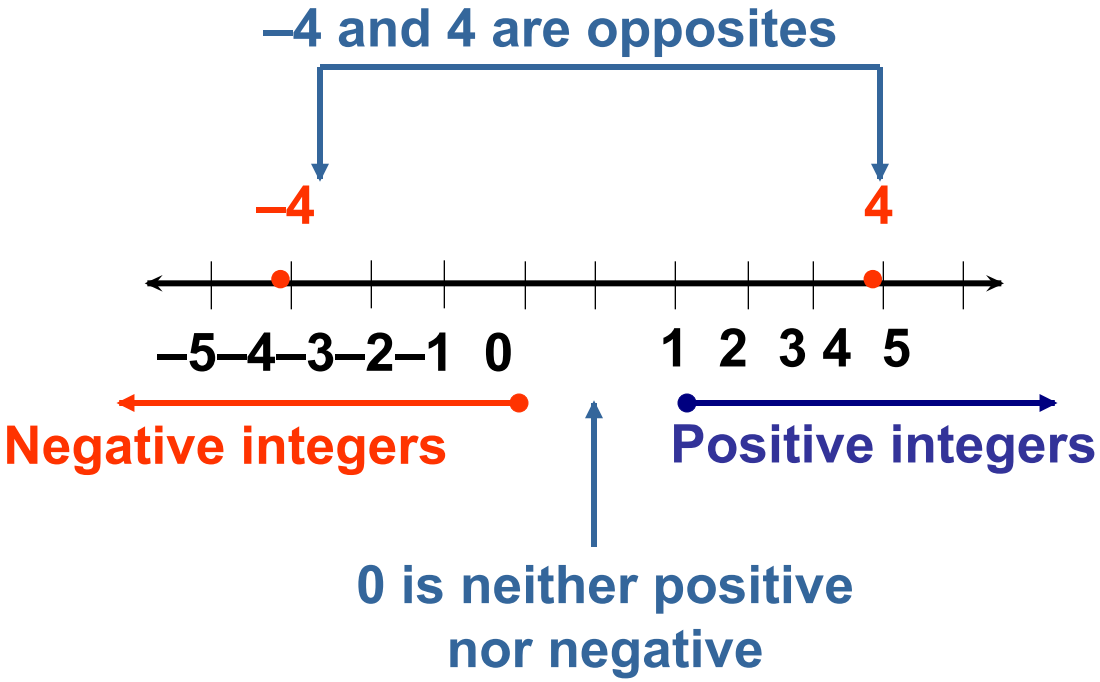
Vocabulary

opposite

integer

absolute value

The **opposite** of a number is the same distance from 0 on a number line as the original number, but on the other side of 0. Zero is its own opposite.



2-1 Integers

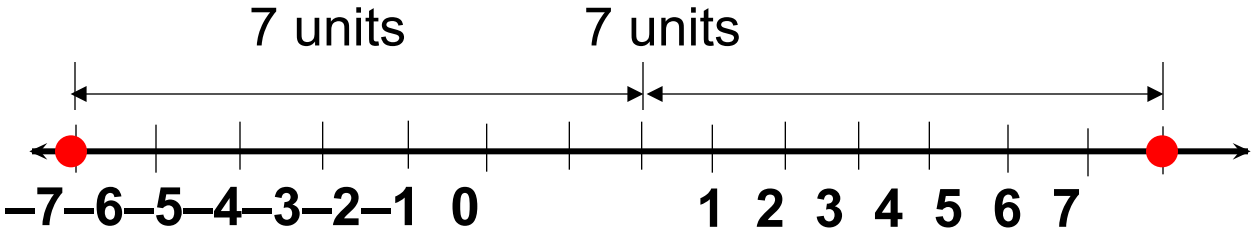
The **integers** are the set of whole numbers and their opposites. By using integers, you can express elevations above, below, and at sea level. Sea level has an elevation of 0 feet.

Remember!

The whole numbers are the counting numbers and zero: 0, 1, 2, 3, ...

Additional Example 1: Graphing Integers and Their Opposites on a Number Line

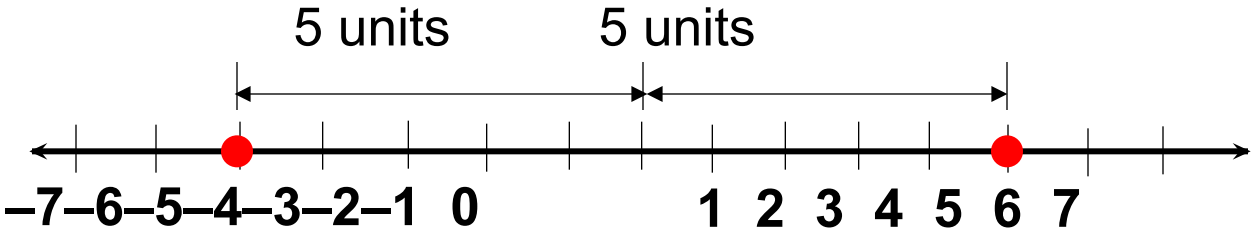
Graph the integer –7 and its opposite on a number line.



The opposite of –7 is 7.

Check It Out: Example 1

Graph the integer –5 and its opposite on a number line.



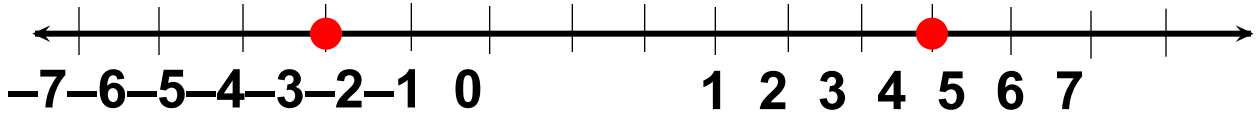
The opposite of –5 is 5.

You can compare and order integers by graphing them on a number line. Integers increase in value as you move to the right along a number line. They decrease in value as you move to the left.

Additional Example 2A: Comparing Integers Using a Number Line

Compare the integers. Use < or >.

4 **>** -4



4 is farther to the right than -4, so 4 > -4.

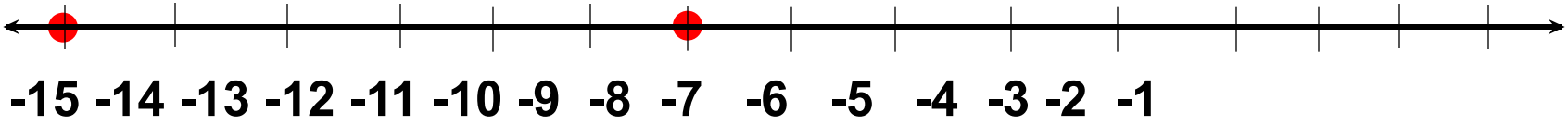
Remember!

The symbol < means “is less than,” and the symbol > means “is greater than.”

Additional Example 2B: Comparing Integers Using a Number Line

Compare the integers. Use < or >.

-15 < -9

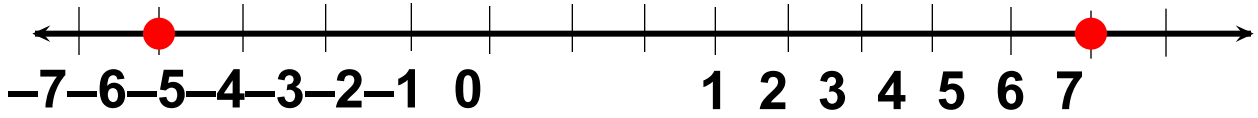


-9 is farther to the right than -15, so -15 < -9.

Check It Out: Example 2A

Compare the integers. Use < or >.

6 > -6

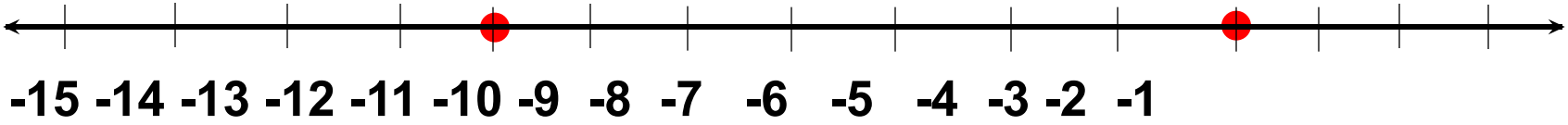


6 is farther to the right than -6, so 6 > -6.

Check It Out: Example 2B

Compare the integers. Use < or >.

-4 > -11



-4 is farther to the right than -11, so -4 > -11.

August 9, 2012 Warm Up:

Place the following numbers on a number line and place them in order from smallest to largest under the number line:

0, ½ , 1, - ½ , ¾ , - ¾ , 2 , -3

CCGPS

MCC7.NS.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.

MCC7.NS.1a Describe situations in which opposite quantities combine to make 0.

MCC7.NS.1b Understand p + q as the number located a distance |q| from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.

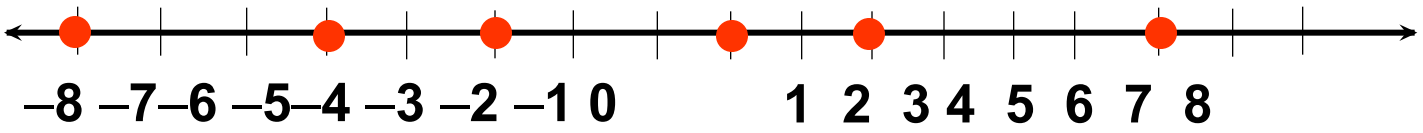
Essential Question:

Can you arrange numbers from least to greatest using a number line and add integers using a zero pair?

Additional Example 3: Ordering Integers Using a Number Line.

Use a number line to order the integers from least to greatest.

–3, 6, –5, 2, 0, –8

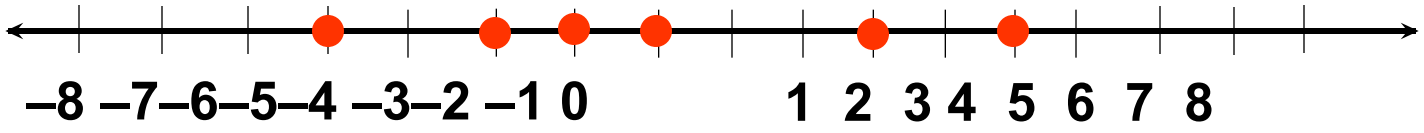


The numbers in order from least to greatest are –8, –5, –3, 0, 2, and 6.

Check It Out: Example 3

Use a number line to order the integers from least to greatest.

–5, 4, –3, 2, –1, –2



The numbers in order from least to greatest are –5, –3, –2, –1, 2, and 4.

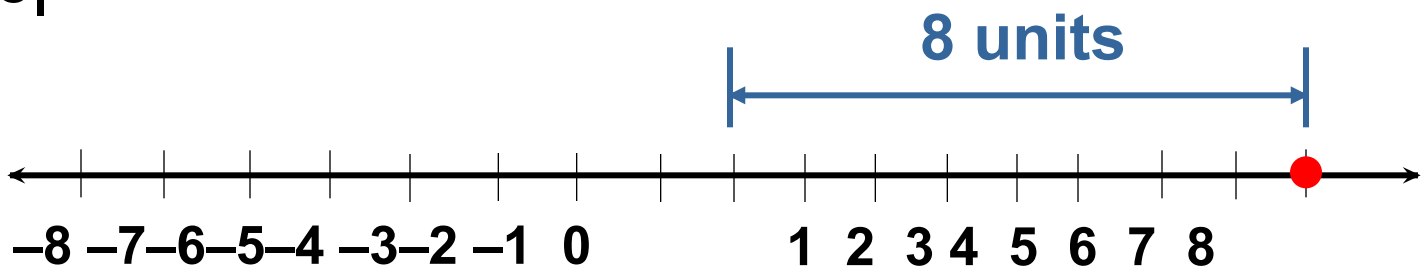
absolute value – the distance from 0 on a number line.

Since distance can never be negative, absolute values are never negative. They are always positive or zero.

Additional Example 4A: Finding Absolute Value

Use a number line to find each absolute value.

|8|



8 is 8 units from 0, so |8| = 8.

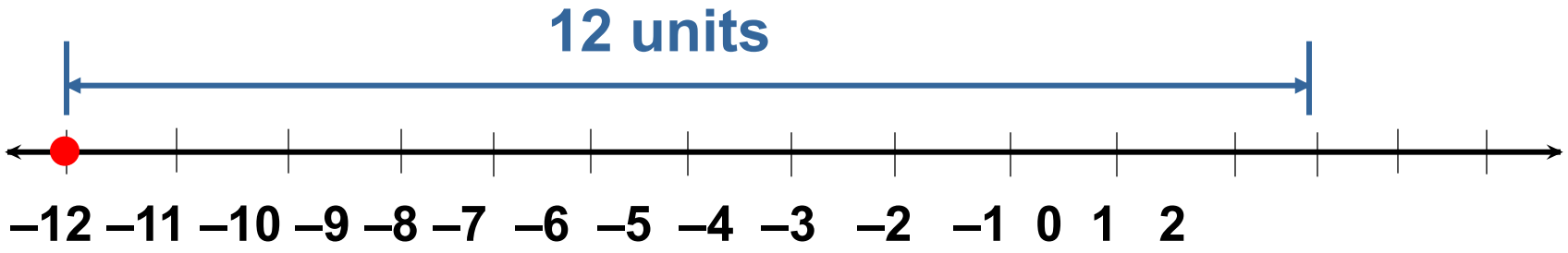
Reading Math

The symbol $|\ |$ is read as "the absolute value of." For example $|-3|$ is the absolute value of -3.

Additional Example 4B: Finding Absolute Value

Use a number line to find each absolute value.

|–12|

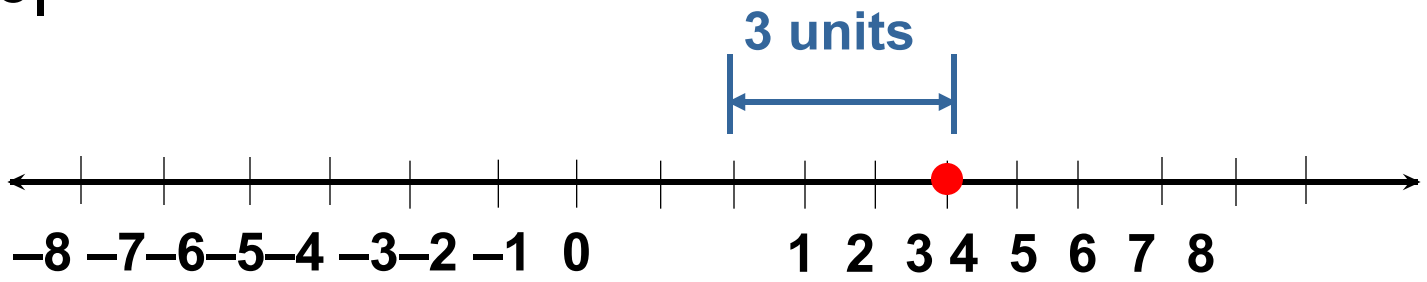


–12 is 12 units from 0, so |–12| = 12.

Check It Out: Example 4A

Use a number line to find each absolute value.

|3|

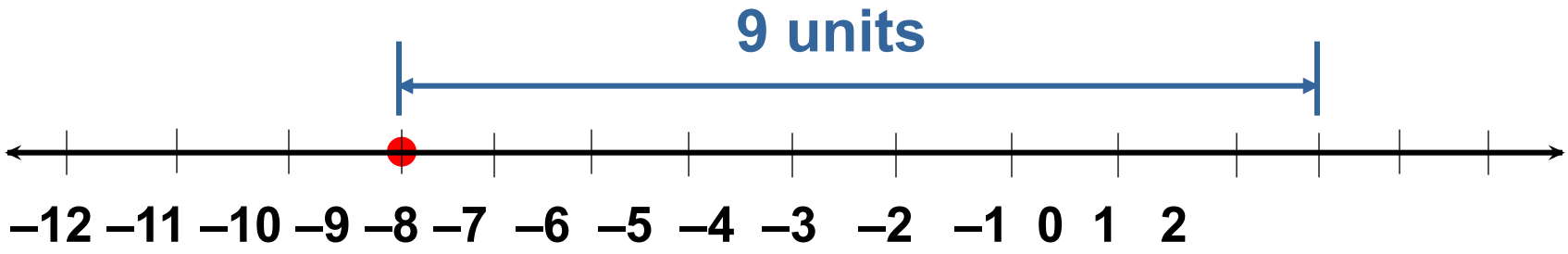


3 is 3 units from 0, so |3| = 3.

Check It Out: Example 4B

Use a number line to find the absolute value.

|–9|



–9 is 9 units from 0, so |–9| = 9.

Lesson Quiz: Part I

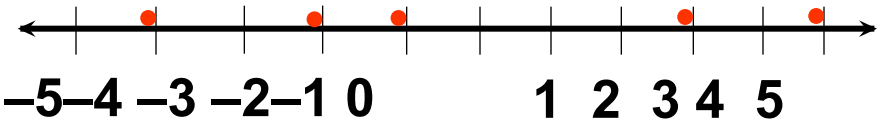
Compare. Use <, >, or =.

1. –32 ▢ 22 <

2. 26 ▢ |–26| =

3. –8 ▢ 12 >

4. Use a number line to order the integers –2, 3, –4, 5, and –1 from least to greatest.

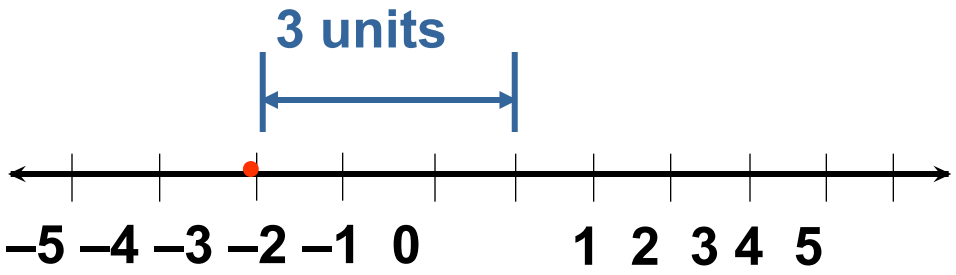


–4, –2, –1, 3, 5

Lesson Quiz: Part II

Use a number line to find the absolute value.

5. $|-3|$

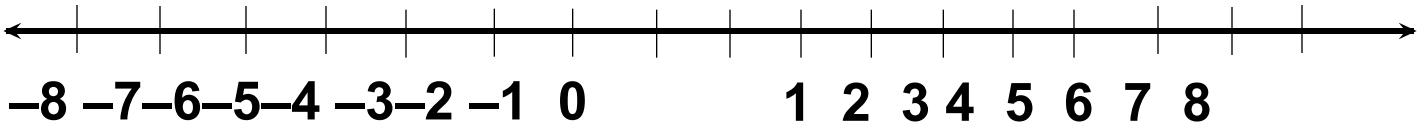


3

2-1 Integers

Plot the following on a number line & list them from smallest to largest :

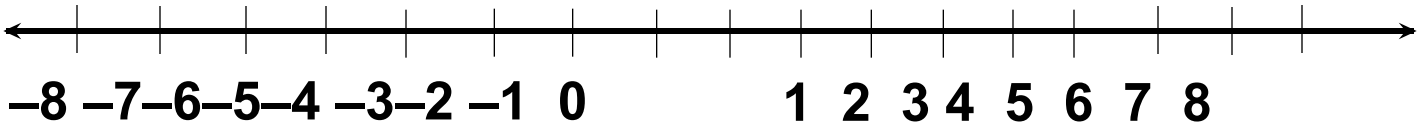
6, 2, -3, 0, -5, 1



2-1 Integers

Plot the following on a number line & list them from smallest to largest :

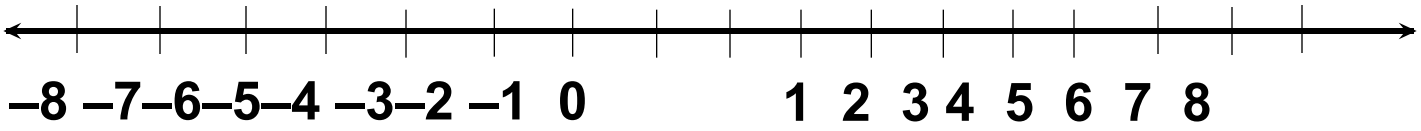
½, 2, -3, 0, -5, 1½ , -1 ½, -6



2-1 Integers

Plot the following on a number line & list them from smallest to largest

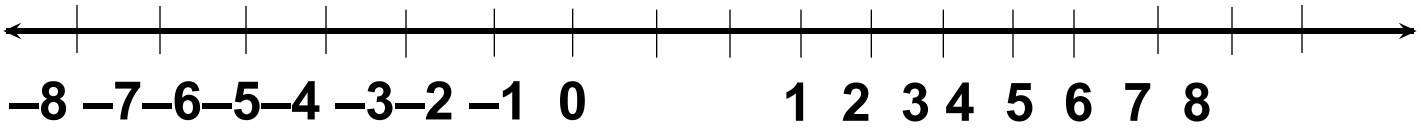
-8, 4, -6, 1, 0, -2, 7, -2½



2-1 Integers

Plot the following on a number line & list them from smallest to largest

-1, -3, 2, 5, -5, 7, 0



INTEGER CHIPS