

## Chapter 2.3 Using models to help divide integers

Monday, September 21, 2015 11:13 AM



## 2.3 Blank notes

### **Math 8 Unit 2: Integers**

Name \_\_\_\_\_

#### **2.3 Using Models to Divide Integers**

Division is the inverse of multiplication. So,  $10 \div 5 = ?$  is the same as  $? \times 5 = 10$ .

The product means, "how many sets of 5 produce 10?"

You can "walk" a number line to model the division of two integers.

If the step size is positive, walk forward.

If the step size is negative, walk backwards.

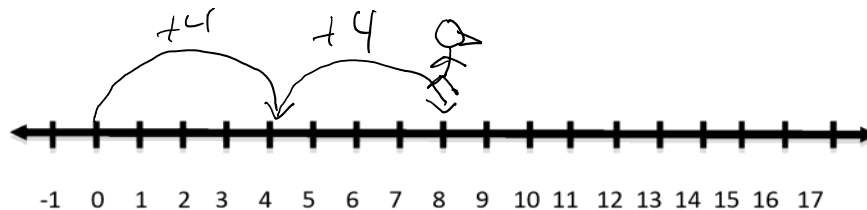
The number of steps is the quotient and the direction you are facing at the end determines its sign.

**Positive  $\div$  Positive** moving right

Divide:  $(+8) \div (+4) \leftarrow$  walking forward



Start at 0. Take steps of size 4 forward to end up at +8.



You took 2 steps and are facing the positive end of the line.

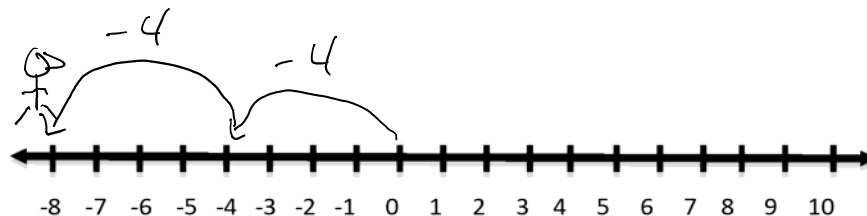
So,  $(+8) \div (+4) = (+2)$

**Negative  $\div$  Negative** moving left

Divide:  $(-8) \div (-4) \leftarrow$  moving backwards.



Start at 0. Take steps of size 4 backward to end up at -8.



You took 2 steps and are facing the positive end of the line.

**Math 8 Unit 2: Integers**  
**2.3 Using Models to Divide Integers**

Name \_\_\_\_\_

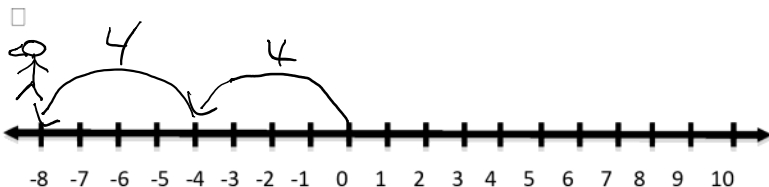
So,  $(-8) \div (-4) = (+2)$

**Negative  $\div$  Positive**

Divide:  $(-8) \div (+4)$

□

Start at 0. Take steps of size 4 forward to end up at -8.



You took 2 steps and are facing the positive end of the line.

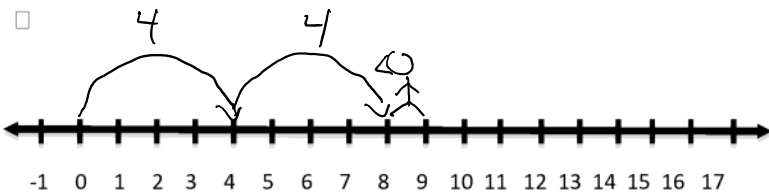
So,  $(-8) \div (+4) = (-2)$

**Positive  $\div$  Negative**

Divide:  $(+8) \div (-4)$

□

Start at 0. Take steps of size 4 backward to end up at +8.



You took 2 steps and are facing the negative end of the line.

So,  $(+8) \div (-4) = (-2)$

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## Math 8 Unit 2: Integers

Name \_\_\_\_\_

### 2.3 Using Models to Divide Integers

You can use tiles to multiply integers.

Let a circle represent the bank. The bank has a zero value at the start.

Divide:  $(-12) \div (+4)$

How many groups of +4 will make -12?

Start with a value of 0 in the circle.

To get a product of -12, we must have 12 black/red tiles in the circle

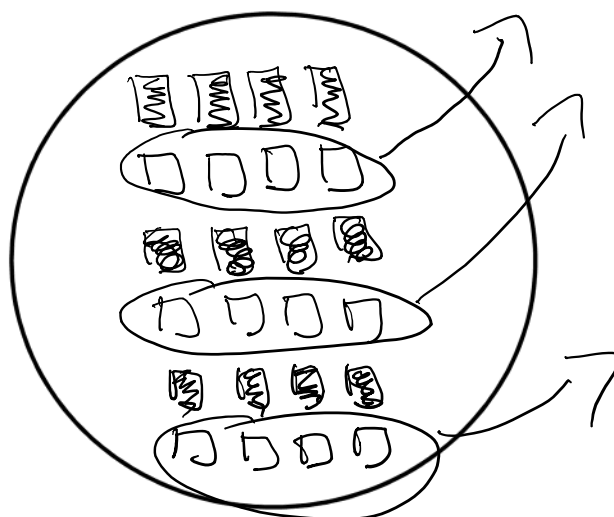
so we add 12 zero pairs.

+4 is modeled with 4 white tiles, so we remove sets of 4 white tiles.

3 sets of +4 were removed.

So,  $(-12) \div (+4) = -3$

we are  
left with  
3 groups  
of negative  
tiles so the  
answer is -3



Assignment: p. 80-82 # 4, 6, 8, 9, 11, 16

Tuesday Quiz on 2.1/2.2  
4-5 questions