

# September 17, 2014

Starter

4th

Use integer counters to compute each problem.

1)  $2 \times -5 = -10$

----- + -----

2)  $3 \cdot -2 = -6$

--- + --- + ---

6, 7, 8

4, 5

0, 1, 3

2

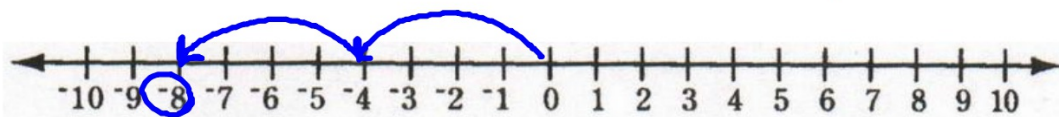
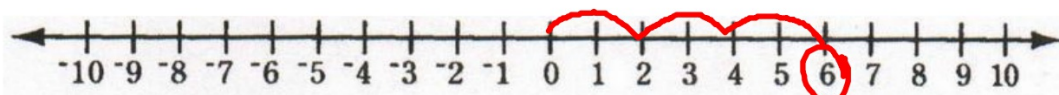
1

0


Use number lines to compute each problem.

3)  $3 \cdot 2 = 6$

4)  $2 \cdot -4 = -8$



## 9/17 - Multiplying Integers: more complicated problems

**Review:** 

Batman \$ Good  
 $+$   $\cdot$   $+$   $=$   $+$

Batman Truck Bad  
 $+$   $\cdot$   $-$   $=$   $-$

Joker  
 $-$   $\cdot$   $+$   $=$   $-$

$-$   $\cdot$   $-$   $=$   $+$

### QUICK WRITE:

Explain "Batman rules" in your own words for the next 2 minutes.

How do you handle a problem with more than 2 integers multiplied together?

$$\begin{aligned} & (-7)(4)(3) \\ & = -7 \cdot 12 \\ & = -84 \end{aligned}$$

$$\begin{aligned} & 8 \cdot -10 \cdot -3 \\ & = 8 \cdot 30 \\ & = 240 \end{aligned}$$

$$\begin{aligned} & -2 \cdot -6 \cdot 4 \cdot 10 \\ & = 12 \cdot 40 \\ & = 480 \end{aligned}$$

$$\begin{aligned} & (-4)(-5)(-1)(-6) \\ & = 20 \cdot 6 \\ & = 120 \end{aligned}$$

$$\begin{aligned} & -5 \cdot 3 \cdot -6 \\ & = 30 \cdot 3 \\ & = 90 \end{aligned}$$

What are "exponents"?

$$3^2 \leftarrow \begin{array}{l} \text{exponent} \\ \text{base} \end{array}$$

$$2^3 \leftarrow \begin{array}{l} \text{exponent} \\ \text{base} \end{array}$$

What does the exponent tell you?

how many times you multiply the base

$$\begin{aligned} 3^2 &= 3 \cdot 3 \\ &= 9 \end{aligned}$$

$$\begin{aligned} 2^3 &= 2 \cdot 2 \cdot 2 \\ &= 8 \end{aligned}$$

Compute - watch the signs carefully!

$$(-2)^3 = (-2)(-2)(-2) = -8$$

$$5^2 = 5 \cdot 5 = 25$$

$$-5^2 = -5 \cdot 5 = -25$$

$$(-5)^2 = -5 \cdot -5 = 25$$

$$(-4)^2 = (-4)(-4) = 16$$

$$-4^2 = -4 \cdot 4 = -16$$

$$(-3)^4 = \underbrace{(-3)(-3)}_9 \cdot \underbrace{(-3)(-3)}_9 = 81$$

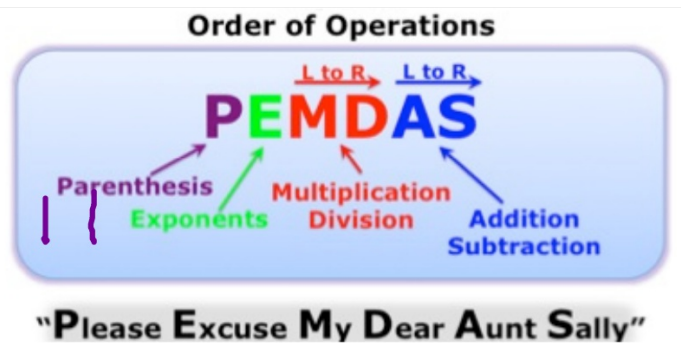
$$-3^4 = -3 \cdot 3 \cdot 3 \cdot 3 = -81$$

$$-6^2 = -6 \cdot 6 = -36$$

$$(-5)^2 = -5 \cdot -5 = 25$$

$$-(-2)^4 = -\underbrace{(-2)(-2)}_+ \cdot \underbrace{(-2)(-2)}_+ = -16$$

In problems with multiple operations, don't forget to use the **order of operations!**



$$\begin{aligned} & | -2^3 | \\ & = | -8 | \\ & = 8 \end{aligned}$$

$$\begin{aligned} & 6^2 \cdot | 2 \cdot -5 | \\ & = 6^2 \cdot | -10 | \\ & = 6^2 \cdot 10 \\ & = 36 \cdot 10 \\ & = 360 \end{aligned}$$

$$\begin{aligned} & -3 \cdot -3^2 (-1) \\ & = -3 \cdot -9 \cdot -1 \\ & = 27 \cdot -1 \\ & = -27 \end{aligned}$$

# Homework

Gold WS6

**Due** Monday -  
end of class