

September 22, 2014 ^{4th}

Starter

Compute each showing all of your work.

1) 2^3
 $= 2 \cdot 2 \cdot 2$
 $= 8$

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

3) $(-3)^4$
 $= (-3)(-3)(-3)(-3)$
 $= 9 \cdot 9$
 $= 81$

4) $-3 \cdot 2^3$
 $= -3 \cdot 8$
 $= -24$

4, 5 \rightarrow 2
2, 3 \rightarrow 1
0, 1 \rightarrow 0

5) $|-4 \cdot 3| \cdot (-2)$
 $= |-12| \cdot (-2)$
 $= 12 \cdot (-2)$
 $= -24$

9/22 Division with Integers

Use integer counters to show:

$8 \div 2$ ← split 8 into 2 equal groups

= 4 since there are 4 in each group.

$-12 \div 3$ ← 3 equal groups

= -4 since there are 4 negatives in each group

Division and Multiplication are inverse operations

so you can rewrite divide equations as multiply equations.

$$8 \div 2 = 4$$

because

$$2 \times 4 = 8$$

or

$$4 \times 2 = 8$$

$$-12 \div 3 = -4$$

because

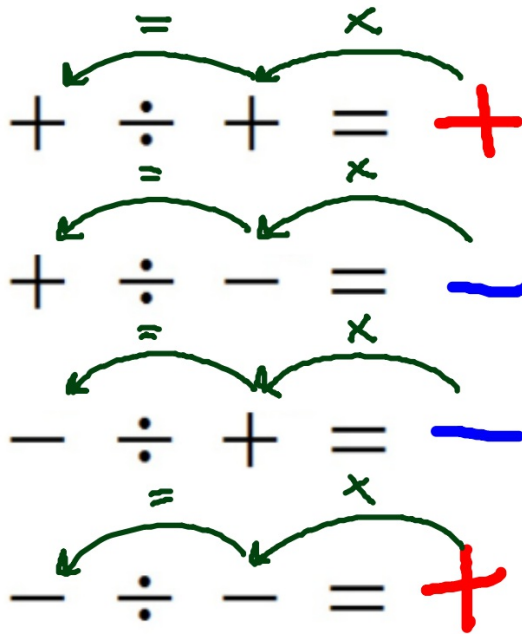
$$-4 \times 3 = -12$$

or

$$3 \times -4 = -12$$

Look at the signs - what are the rules for dividing integers?

(Discuss with your partner)



Batman
Rules
Work!

● On Your Own

Divide.

1. $14 \div 2 = 7$

2. $-32 \div (-4) = 8$

3. $-40 \div (-8) = 5$

4. $0 \div (-6) = 0$

5. $\frac{-49}{7} = -7$

6. $\frac{21}{-3} = -7$

$-6 \div 0 = \emptyset$

means
no answer

Now some harder ones. Remember to use the Order of Operations!!

$$\begin{aligned} & -4 \cdot \frac{18}{-3} \\ &= -4 \cdot -6 \\ &= 24 \end{aligned}$$

$$\begin{aligned} & \left(\frac{6}{-2} \right)^2 \\ &= (-3)^2 \\ &= -3 \cdot -3 \\ &= 9 \end{aligned}$$

$$\begin{aligned} & -5 \cdot \left(\frac{10}{-5}\right)^3 \\ &= -5 \cdot (-2)^3 \\ & \quad \quad \quad -2 \cdot -2 \cdot -2 \\ &= -5 \cdot -8 \\ &= 40 \end{aligned}$$

$$\begin{aligned} & -4 \cdot \frac{3 \cdot -8}{6 \cdot -2} \\ &= -4 \cdot \frac{-24}{-12} \\ &= -4 \cdot 2 \\ &= -8 \end{aligned}$$

What does *mean* mean?

average

- ① Add all of the numbers
- ② Divide by the number of numbers

Find the mean of each set of integers.

-16, -27, 21, -19, 14, -3

$$\begin{array}{r} 21 \\ 14 \\ + 35 \\ \hline \end{array} \quad \begin{array}{r} 2 \\ -16 \\ -27 \\ -19 \\ -3 \\ \hline -65 \end{array} \quad \begin{array}{r} -65 \\ + 35 \\ \hline -30 \div 6 \\ \hline = -5 \end{array}$$

5, -7, 12, -10, 15

$$\begin{array}{r} 15 \\ 12 \\ + 5 \\ \hline 32 \end{array} \quad \begin{array}{r} -10 \\ -7 \\ -17 \\ \hline \end{array} \quad \begin{array}{r} + 32 \\ - 17 \\ \hline + 15 \end{array}$$
$$15 \div 5 = 3$$

-20, 18, -16, 14, -12, 10

Homework

White WS7

Due Wednesday