

9-26-17

Aim: SWBAT apply knowledge of integers to complete contextual word problems.

HW: Worksheets

Quiz tomorrow (add, subtract, multiply, divide)

Test next Tuesday

Do Now: Classwork # 1 - 8

AIM: SWBAT multiply and divide integers.

DO NOW:

DO NOT COMPUTE!! State whether the answer will be POSITIVE, NEGATIVE or ZERO.

Rules for Adding/Subtracting

Same signs - \_\_\_\_\_

Different signs - \_\_\_\_\_

1)  $(-19)(-10)$  \_\_\_\_\_  
 2)  $-27 + 96$  \_\_\_\_\_

5)  $-152 \div 4$  \_\_\_\_\_  
 6)  $53 + 9$  \_\_\_\_\_

9)  $\frac{-16}{-4}$  \_\_\_\_\_  
 10)  $32 + -12$  \_\_\_\_\_

13)  $15 - 27$  \_\_\_\_\_  
 14)  $57 - 42$  \_\_\_\_\_

17)  $-49 \div -7$  \_\_\_\_\_  
 18)  $(-4)^{23}$  \_\_\_\_\_

Rules for Multiplying/Dividing two Integers

Same signs - \_\_\_\_\_

Different signs - \_\_\_\_\_

3)  $-24 - (-19)$  \_\_\_\_\_  
 4)  $-80 + 80$  \_\_\_\_\_

7)  $(14)(7)$  \_\_\_\_\_  
 8)  $(0)(9)$  \_\_\_\_\_

11)  $0 - -5$  \_\_\_\_\_  
 12)  $-42 - 50$  \_\_\_\_\_

15)  $(29)(-30)(-20)$  \_\_\_\_\_  
 16)  $-4 - (-4)$  \_\_\_\_\_

19)  $-7 + 7$  \_\_\_\_\_  
 20)  $(-5)^{10}$  \_\_\_\_\_

CLASSWORK:



Evaluate.

1)  $5(-7)$   
 $-35$

2)  $-6 \cdot -3$   
 $18$

3)  $-4 \cdot 8$   
 $-32$

4)  $-91 \div -7$   
 $13$

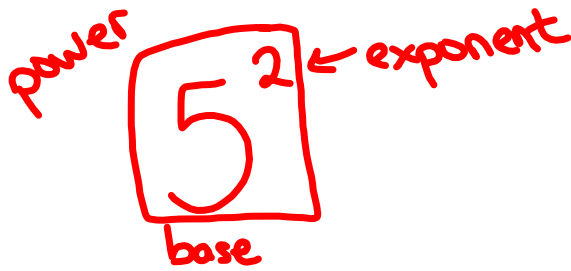
*Handwritten work:  $\begin{array}{r} 13 \\ 7 \overline{)91} \\ \underline{-7} \phantom{0} \\ 21 \end{array}$*

5)  $240 \div -15$   
 $-16$

6)  $\frac{-96}{3}$   
 $-32$

7)  $(-5)(-3)(7)$   
 $(15)(7)$   
 $105$

8)  $(7)(4)(-2)(-1)$   
 $(28)(2)$   
 $56$



$$5 \cdot 5 = 25$$

$$(-1)(-1)(-1)$$

$$(-1)(-1)(-1)(-1)(-1)(-1)$$

$$(-1)^3$$

← neg. bases must go in parentheses

$$(-1)^6$$

"Neg. 1 to the 3<sup>rd</sup> power"  
-1

-1<sup>3</sup> "opp. of 1<sup>3</sup>"

$$(-1)^{51} \leftarrow \text{odd}$$

$$(-1)^{2000} \leftarrow \text{even}$$

$$-1$$

neg. bases always go in parentheses !!!

When completing a series of multiplication...

0 negative signs  $\longrightarrow$  +

1 negative sign  $\longrightarrow$  -

2 negative signs  $\longrightarrow$  +

3 negative signs  $\longrightarrow$  -

Therefore,

Even # of negative signs  $\longrightarrow$  positive answer

Odd # of negative signs  $\longrightarrow$  negative answer

## HOMEWORK

Read each problem carefully, write a number sentence and solve.

- 1) At night the average temperature on the surface of the planet Saturn is  $-150$  degrees Celsius. During the day the temperature rises  $27$  degrees Celsius. What is the average temperature on the planet's surface during the day?

$$-150 + 27 = -123$$

$$\begin{array}{r} 150 \\ - 27 \\ \hline \end{array}$$

- 2) To get a first down, a football team must gain 10 yards in 4 plays. If the team gained 5 yards on the first play, lost 7 yards on the second play, and gained 8 yards on the third play. How many yards must they gain on the fourth play to get a first down?

$$5 - 7 + 8 = 6$$

$$10 - 6 = 4$$

- 3) A balloon rises  $200$  feet from the ground, drops  $150$  feet and then rises  $300$  feet. What is the new height of the balloon?

$$200 - 150 + 300 = 350$$

- 4) A scuba diver is  $85$  feet below sea level. The diver rises  $12$  feet then descends  $60$  feet. How far below sea level is the diver?

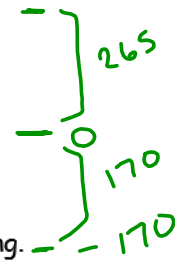
$$-85 + 12 - 60 = -133$$

- 5) The record low temperature for Albany, NY was  $-28^{\circ}\text{F}$ . The lowest temperature in U.S. history is  $52^{\circ}\text{F}$  lower than Albany's record low. What is the lowest temperature in U.S. history?

$$-28 - 52 = -80$$

- 6) During the day the moon can reach a high temperature of  $265^{\circ}\text{F}$ . At night, the temperature can reach a low of  $-170^{\circ}\text{F}$ . What is the difference between the high temperature and low temperature on the moon?

$$265 - (-170) = 435$$



- 7) Are the expressions  $x - y$  and  $y - x$  always opposites? Explain your reasoning.

$$\begin{array}{l} x = 0 \\ y = 0 \end{array}$$

$$\begin{array}{l} 0 - 0 \\ 0 \end{array} \quad \begin{array}{l} 0 - 0 \\ 0 \end{array} \quad \checkmark$$

yes

$$\begin{array}{l} x = 1 \\ y = 2 \end{array}$$

$$\begin{array}{l} 1 - 2 \\ -1 \end{array} \quad \begin{array}{l} 2 - 1 \\ 1 \end{array}$$

- 8) Carl had \$200 in his checking account. He wrote 3 checks, one for \$57 and another for \$103. He did not record the amount of the third check. Carl received a statement stating that he overdrew his account (meaning he took out more money than he had) by \$55. What was the amount of the third check that Carl wrote?

$$200 - 57 - 103 - \boxed{x} = -55$$

$$200 - 57 - 103 = 40$$

$$40 - (-55) = \textcircled{95}$$

**HOMEWORK: Evaluate.**

1)  $-63 \div 7$

$-9$

2)  $-54 \div -9$

$6$

3)  $16 \div 2$

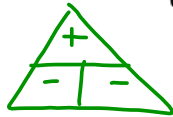
$8$

4)  $-36 \div -6$

$6$

5)  $-9 \cdot -13$

$117$



6)  $4 \cdot -23$

$-92$

7)  $-5(-12)$

$60$

\* 8)  $(-13)(7)$

$-91$

9)  $-3(2)(7)$

$-42$

10)  $-3(4)(-7)$

$84$

11)  $(-7)(-8)(5)$

$280$

12)  $(-2)(-4)(-5)$

$-40$

Read each word problem, write a number sentence and solve.

- 13) A shoreline is changing  $-3$  cm each year due to erosion. What will the change in the shoreline be in 6 years?

$$(-3)(6) = -18$$

- 14) The temperature during a 5-day period in Center City were  $-19^{\circ}\text{F}$ ,  $-14^{\circ}\text{F}$ ,  $-8^{\circ}\text{F}$ ,  $13^{\circ}\text{F}$  and  $18^{\circ}\text{F}$ . What was the average temperature for those 5 days?

$$\frac{(-19) + (-14) + (-8) + (13) + (18)}{5} = \frac{-10}{5} = -2$$

- 15) The price of a stock rose \$2 yesterday. If the stock continues to change at the same rate each day, what will be the total change over 10 days?

$$2(10) = 20$$

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