September 25, 2019

**Aim:** swbat review operations with integers and real life applications with integers

**Do Now:**
1. check your hw answers

**HW:** Finish packet pp. 44-45

  Integer Test Friday, 10/4
EXTRA PRACTICE: apply your knowledge of integer rules to real world situations.

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

1) If the high temperature for the day was 19°F and the low temperature was -5°F, what was the change in temperature?

\[19 - (-5) = 24\]

The change in temperature is 24 degrees.

2) A submarine is 250 meters below sea level. The submarine then rises 175 meters. What is the new position of the submarine?

\[-250 + 175 = -75\]

The submarine is 75 meters below sea level.

3) If the deepest point in the area is 37,800 feet below sea level and the highest mountaintop is 29,012 feet above sea level, find the difference in these elevations.

\[29,012 - 37,800 = 66,812\]

The difference is 66,812 feet.

4) You enter an elevator on the eighth floor. The elevator goes up 5 floors and then down 7 floors, where you exit. On what floor did you exit the elevator?

\[8 + 5 - 7 = 6\]

You exit on the 6th floor.

5) At 5 P.M. the temperature read 10°F above zero. At midnight it read 4°F below zero. Find the change in temperature.

\[10 + 4 = 14\]

The change is 14 degrees.

6) A whale that is 660 feet below sea level rises up out of the water to a height of 32 feet above sea level. How far up did the whale travel?

\[660 + 32 = 692\]

Or

\[32 - (-660) = 692\]

The whale traveled 692 feet.
<table>
<thead>
<tr>
<th>Find the product or quotient</th>
<th>positive</th>
<th>negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same Signs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) $4(-9)$</td>
<td>-36</td>
<td></td>
</tr>
<tr>
<td>2) $-5(-7)$</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>3) $-12(0)$</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>4) $-9(-11)$</td>
<td>99</td>
<td></td>
</tr>
<tr>
<td>5) $\frac{-64}{-8}$</td>
<td>8</td>
<td>-5</td>
</tr>
<tr>
<td>6) $\frac{-32}{4}$</td>
<td>-8</td>
<td>0</td>
</tr>
<tr>
<td>7) $50 \div -10$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8) $0 \div -29$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9) $-12 \cdot 8$</td>
<td>-96</td>
<td></td>
</tr>
<tr>
<td>10) $-13 \cdot -20$</td>
<td>260</td>
<td></td>
</tr>
<tr>
<td>11) $6(-5)(-7)$</td>
<td>210</td>
<td></td>
</tr>
<tr>
<td>12) $-5(-7)(-3)$</td>
<td>-105</td>
<td></td>
</tr>
<tr>
<td>13) $-36 \div 3$</td>
<td>-12</td>
<td></td>
</tr>
<tr>
<td>14) $\frac{30}{-15}$</td>
<td>-2</td>
<td></td>
</tr>
<tr>
<td>15) $\frac{-56}{-7}$</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>16) $42 \div 2$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17) $42(-3)(0)$</td>
<td>0</td>
<td>-105</td>
</tr>
<tr>
<td>18) $-5(-7)(-3)$</td>
<td></td>
<td>-280</td>
</tr>
<tr>
<td>19) $4(-5)(-7)(-2)$</td>
<td></td>
<td>-280</td>
</tr>
<tr>
<td>20) $(-10)(-10)(4)$</td>
<td></td>
<td>400</td>
</tr>
</tbody>
</table>
ENRICHMENT: operations with integers

Rules for Adding/Subtracting

<table>
<thead>
<tr>
<th>Same signs</th>
<th>Subtract</th>
</tr>
</thead>
<tbody>
<tr>
<td>Different signs</td>
<td>Add</td>
</tr>
</tbody>
</table>

Rules for Multiplying/Dividing two Integers

<table>
<thead>
<tr>
<th>Same signs</th>
<th>Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Different signs</td>
<td>Negative</td>
</tr>
</tbody>
</table>

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

Write the WORD (positive, negative or zero). No NUMBER answers. Be Careful, Check the Operation FIRST (addition, subtraction, multiplication, division), then choose your rules!

1) \((-19)(-10)\) \(\text{positive}\)
2) \(-27 + 96\) \(\text{positive}\)
3) \(-24 - (-19)\) \(\text{negative}\)
4) \(-80 + 80\) \(\text{zero}\)
5) \(-152 \div 4\) \(\text{negative}\)
6) \(53 + 9\) \(\text{positive}\)
7) \((14)(7)\) \(\text{positive}\)
8) \((0)(9)\) \(\text{zero}\)
9) \(-16 - 4\) \(\text{negative}\)
10) \(32 - 12\) \(\text{positive}\)
11) \(0 - 5\) \(\text{negative}\)
12) \(-42 - 50\) \(\text{negative}\)
13) \(15 - 27\) \(\text{negative}\)
14) \(57 - 42\) \(\text{positive}\)
15) \((29)(-30)(-20)\) \(\text{positive}\)
16) \(-4 - (-4)\) \(\text{zero}\)

PRACTICE:

Evaluate. (Find the value; compute)

1) \(5(-7)\) \(-35\)
2) \(-6 \times -3\) \(18\)
3) \(-4 \times 8\) \(-32\)
4) \(-91 \div -7\) \(13\)
5) \(240 \div -15\) \(-16\)
6) \(\frac{-96}{3}\) \(-32\)
7) \((-5)(-3)(7)\) \(105\)
8) \((7)(4)(-2)(-1)\) \(56\)
ANSWER KEY

Comparing Integers

Compare. use the symbols: <, >, and =.

a. 3 > -5  
b. -10 < 0  
c. -7 < 7  
d. -1 = -1  
e. -8 < -2  
f. 14 > -15  
g. -56 > -58  
h. 43 > 34  
i. -16 < 15  
j. -354 < -345  
k. 789 > -798  
l. -605 > -655

Circle the integer with the greatest value.

m. 4  
   -5  

n. -16  
   -14  
   0  

p. -51  
   7  

q. 57  
   75  

r. -290  
   -209

Answer the questions.

s. Which is colder: -3°F or 0°F?  -3°F

f. Which is warmer: -13°C or -10°C?  -10°C

u. Which is a higher elevation:  
   40 feet below sea level or 14 feet below sea level?  14 feet below sea level

v. Which is a higher elevation:  
   2 feet below sea level or 1 foot above sea level?  1 foot above sea level
ANSWER KEY

Operations with Integers

Add, subtract, multiply, or divide to find the answer to each problem.

a. \( 2 + (-7) = -5 \)
b. \( 0 - (-4) = 4 \)
c. \( 56 \div (-8) = -7 \)
d. \( -63 \div 9 = -7 \)
e. \( -25 + (-4) = -29 \)
f. \( -4 \times (-6) = 24 \)
g. \( 14 \div (-7) = -2 \)
h. \( -14 + 20 = 6 \)
i. \( -5 \times (-9) = 45 \)
j. \( -1 + (-5) = -6 \)
k. \( 18 - (-4) = 22 \)
l. \( -12 \times 6 = -72 \)
m. \( -3 \times 100 = -300 \)

n. Overnight, the temperature in Toronto, Ontario dropped from 3°C to -4°C. How many degrees did the temperature change? answer: 7°C

o. The temperature in Fairbanks, Alaska rose from -1°F to 9°F. How many degrees did the temperature change? answer: 10°F