

Name: KEY Date: _____ Learning Community: _____

Integers Unit – Practice Test



**Double check
ALL work**

Assessment Rubric:

Beginning 1	Part-way 2	Understand 3	Explain/Extend & Apply 4
<p>I'm confused. I need to ask for help.</p> <ul style="list-style-type: none"> • Demonstrates a limited understanding of concepts • Solution follows a partially logical sequence but contains major errors or • No logical solution is provided, but answer is correct 	<p>I'm almost there. I can do it with support.</p> <ul style="list-style-type: none"> • Demonstrates a basic understanding of concepts • Solutions follows a partially logical sequence but contains more significant errors and/or omissions 	<p>I feel confident. I can do it on my own.</p> <ul style="list-style-type: none"> • Demonstrates a good understanding of concepts, but may not be able to apply their understanding to solve the extension problems, and/or explain or model their work • Solutions follows a logical sequence but contains minor errors and/or omissions 	<p>I feel very confident. I can teach my friends.</p> <ul style="list-style-type: none"> • Demonstrates a thorough understanding of concepts • Is able to apply their understanding to solve the extension problems • Is able to explain, model and show their work when asked

Question #	Learning Targets	Student Self-Assessment
1a-c, 2	I can represent and communicate my understanding of adding integers using a model.	1 2 3 4
1b-d, 3	I can represent and communicate my understanding of subtracting integers using a model.	1 2 3 4
4, 5	I can add integers without a model.	1 2 3 4
4, 6	I can subtract integers without a model.	1 2 3 4
7	I can represent and communicate my understanding of multiplying integers using a model.	1 2 3 4
8	I can apply my understanding of the sign rules when multiplying and dividing integers.	1 2 3 4
9	I can represent and communicate my understanding of order of operations with integers.	1 2 3 4
10	I can apply my understanding of integer operations to solve word problems.	1 2 3 4
Extension	I was able to attempt the extension problems☺	1 2 3 4

Date handed back to student: _____

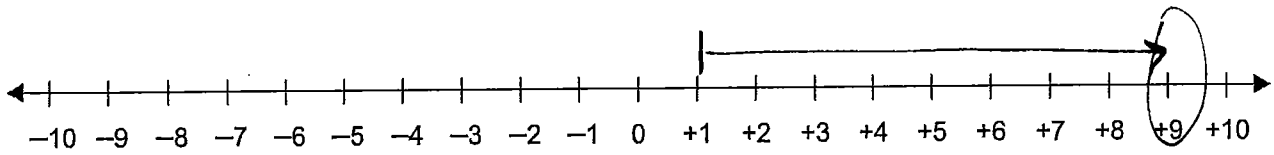
Parent signature: _____

Date of signature: _____

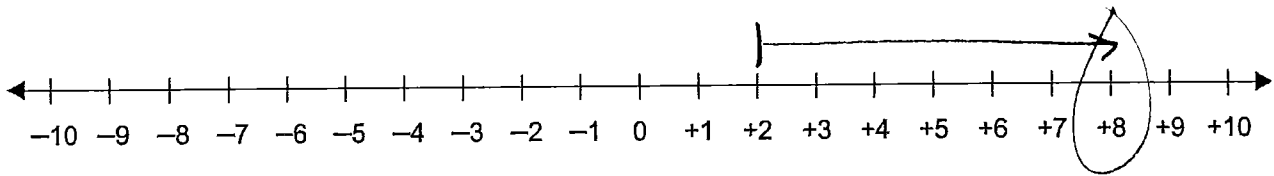
Show all of your work. Be sure to clearly show your answer. Good luck!

1. Use a number line to add or subtract.

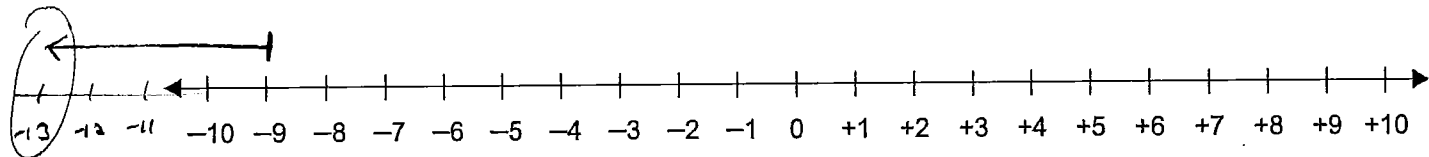
a) $(+1) + (+8) = \underline{+9}$



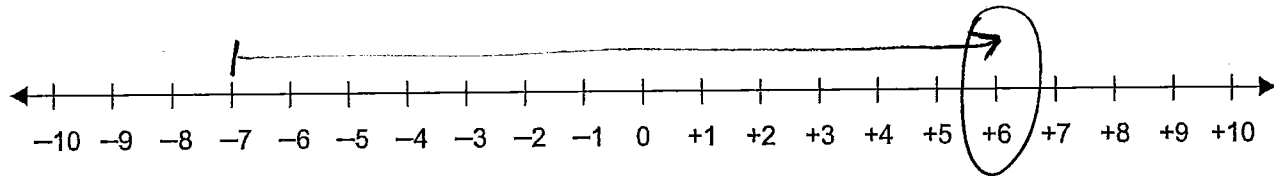
b) $(+2) - (-6) = \underline{+8}$



c) $(-9) + (-4) = \underline{-13}$



d) $(-7) - (-13) = \underline{+6}$



2. Use tiles to model your solution. Find the sum.

a) $(+4) + (+1) = \underline{+5}$



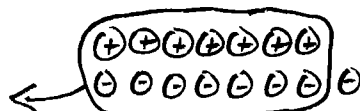
b) $(-3) + (+5) = \underline{+2}$



c) $(-5) + (-2) = \underline{-7}$



d) $(+7) + (-8) = \underline{-1}$



3. Use tiles to model your solution. Find the difference.

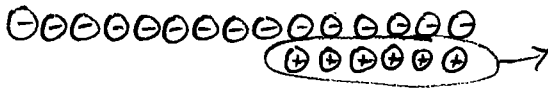
a) $(+7) - (+4) = +3$



b) $(-2) - (-3) = +1$



c) $(-9) - (+6) = -15$



d) $(+4) - (-2) = +6$



4. a) Suppose you have 10 positive tiles, and you use all of them. How many negative tiles would you need to model $(+2)$? How do you know?

You would need 8 negative tiles to model $(+2)$.

$$(+10) + (-8) = +2$$

b) Show two ways that $(+4)$ can be written as the difference of two integers.

1. $(+6) - (+2) = +4$

check:

$$(+6) + (-2) = +4$$

2. $(-8) - (-12) = +4$

check:

$$(-8) + (+12) = +4$$

* there are various equations that would give $(+4)$.
[I've only shown two.]

5. Solve using mental math (or the help of a multiplication table), find the sum.

a) $(+4) + (+1) = +5$

b) $(-3) + (+5) = +2$

b) $(-13) + (-12) = -25$

d) $32 + (-16) = +16$

6. Solve using mental math (or the help of a multiplication table), find the difference.

HINT: Remember to rewrite the question.

a) $(+7) - (+4) = +3$
 $(+7) + (-4)$

b) $(-2) - (-3) = +1$
 $(-2) + (+3)$

b) $(+13) - (-14) = +27$
 $(+13) + (+14)$

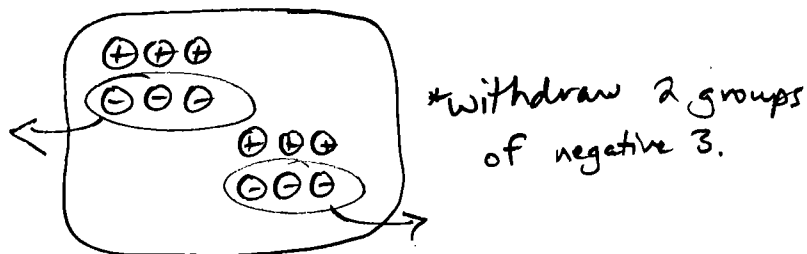
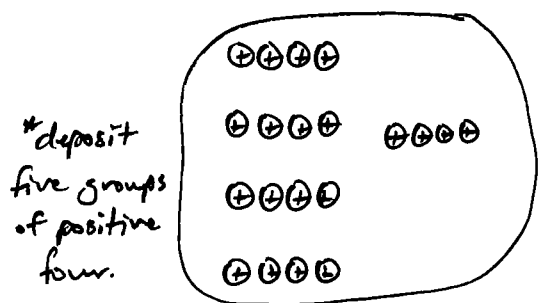
d) $(-33) - (+19) = -52$
 $(-33) + (-19)$

*Remember we use the "bank" method... first integer tells you

7. Use tiles to model your solution. Find the product. if you're depositing (+) or

a) $(+5) \times (+4) = +20$ *deposit*

b) $(-2) \times (-3) = +6$ *withdrawing (-)*
(but you need to add zero pairs first!)



8. Find the product or quotient for each of the following expressions.

a) $(+9) \times (+2) = +18$

b) $(-38) \div (+1) = -38$

c) $(-20) \div (+2) = -10$

d) $(-13) \times 0 = 0$

e) $(-1) \times (+25) = -25$

f) $(+120) \div (-10) = -12$

9. Solve. Remember to solve one step at a time and show all work!

Put a box around your answer.

a) $(-3) \times (-5) - (+8) =$
 $(+15) - (+8)$
 $= \boxed{+7}$

b) $(+7) - (-4) + (-9) =$
 $(+11) + (-9)$
 $= \boxed{+2}$

c) $(-11) \times 4 \div (-2) =$
 $(-44) \div (-2)$
 $= \boxed{+22}$

d) $(-3)[(-8) - 11] =$
 $(-8) + (-11)$
 $= (-3)(-19)$
 $= \boxed{+57}$

e) $\frac{4 \times (-4) + (-8)}{[10 + (-1)] + [2 \times (-3)]} =$
 $= \frac{(-16) + (-8)}{(+9) + (-6)}$
 $= \frac{-24}{+3}$
 $= \boxed{-8}$

10. Write an integer expression for the following problems. Answer with a sentence and proper units.

- a) The temperature on Wednesday evening was -5°C . The temperature decreased another 8°C throughout the night. What was the temperature on Thursday morning?

$$(-5) + (-8) = -13$$

The temperature on Thursday morning was -13°C .

- b) A glacier retreated about 2 m per day for 7 days. What is the total change in the length of the glacier?

$$(-2) \times (+7) = -14$$

The glacier lost 14 m of length.

- c) Keisha had \$405 in her bank account. In one month, she made 4 withdrawals of \$45 each. What is the balance in her account?

Keisha's balance is now \$225.

$$(+4) \times (-45) = -180$$

$$405 - 180 = 225$$

[or b/c we're trying to find total change in her account you could write... $(+405) + (-180)$]

11. Take It Further ☺ Do you feel you're level of understanding is at the Explain/Extend & Apply level? Try these extension questions.

- a) The sum of three even consecutive integers is 60. Find the smallest integer.

$$(+18) + (+20) + (+22) = 60$$

- b) The sum of three even consecutive integers is -72 . Find the three integers.

$$(-22) + (-24) + (-26) = -72$$

c) Use the integers +3, +8, -7, +10, -11.

i) Which two integers have the least product?

$$(+8) \times (-11) = \boxed{-88}$$

ii) Which two integers have the greatest product?

$$(+8) \times (+10) = \boxed{+80}$$

d) Solve using the order of operations.

$$\begin{aligned} & 2^3 + (-16) \div 4^2 \cdot 5 - (-3) = \\ & = 8 + (-16) \div 16 \cdot 5 - (-3) \\ & = 8 + (-1) \cdot 5 - (-3) \\ & = 8 + (-5) - (-3) \\ & = (+3) - (-3) \\ & = \boxed{+6} \end{aligned}$$

e) Add brackets to make this statement true.

$$\begin{aligned} & [8 + 5] \times [(-6) - 4] = -130 \\ & = 13 \times (-10) = -130. \end{aligned}$$