INTEGERS SELF STUDY REVIEW

This is a quick review package for *self study* on how to handle negative and positive numbers.

Let's just say this is Middle School stuff, not eager to teach it in Grade 12!

So if this skill is weak *and* times tables are not nailed down, you can be guaranteed to run out of time on quizzes and tests!

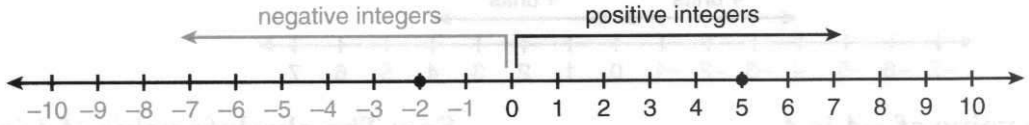
There is a button on your calculator to make the sign of a number negative, but if you have to reach for a calculator to do this every time you will be eating up valuable time!

NAME _____

ALGEBRA READINESS
Integers

Negative and positive whole numbers are called integers.

Integers are often shown on a number line with zero as a starting point.

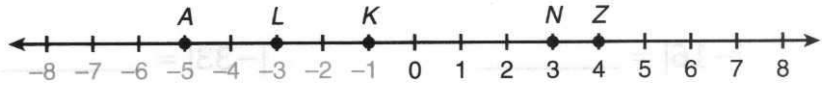


The greater of two integers is always the one farther to the right on a number line.

Say: −2 is less than 5.
Write: $-2 < 5$

Say: 5 is greater than −2.
Write: $5 > -2$

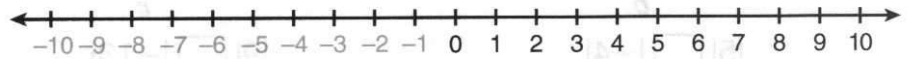
Use integers to name each point on a number line.



1. *N* _____ *L* _____ *Z* _____ *K* _____ *A* _____

Graph each point on the number line below.

2. *B*, −7 *F*, 1 *M*, 4 *P*, −4 *S*, 5



Write < or > in each ☐.

	a	*b*	*c*	*d*
3.	−1 ☐ −3	4 ☐ 2	0 ☐ 5	0 ☐ −1
4.	−4 ☐ −2	−8 ☐ 0	4 ☐ −4	−1 ☐ −7
5.	−6 ☐ 1	2 ☐ −6	−5 ☐ 0	−7 ☐ −8

List each set of integers in order from least to greatest.

	a	*b*
6.	4, 0, −2, −1 _____	−6, −1, 1, −5 _____
7.	1, 0, −1, −7, −3 _____	−2, 2, 0, −3, 3 _____

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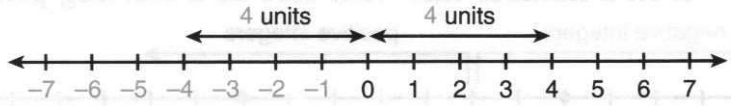
ALGEBRA READINESS
Absolute Value

The **absolute value** of a number is the distance that number is from zero on the number line. The absolute value of a number is always positive.



Say: The absolute value of −4 is 4.
Write: $|-4| = 4$

Say: The absolute value of 4 is 4.
Write: $|4| = 4$

Write the absolute value of each number.

	a	*b*	*c*
1.	$\|-7\| =$ _____	$\|14\| =$ _____	$\|0\| =$ _____
2.	$\|25\| =$ _____	$\|-16\| =$ _____	$\|-33\| =$ _____
3.	$\|-78\| =$ _____	$\|118\| =$ _____	$\|-250\| =$ _____

Write < or > in each ☐.

	a	*b*	*c*
4.	$\|-6\| \square \|4\|$	$\|5\| \square \|-4\|$	$\|9\| \square \|-13\|$
5.	$\|0\| \square \|-5\|$	$\|-6\| \square \|-3\|$	$\|11\| \square \|15\|$
6.	$\|-25\| \square \|-23\|$	$\|-10\| \square \|0\|$	$\|-7\| \square \|-9\|$
7.	$\|35\| \square \|47\|$	$\|55\| \square \|-45\|$	$\|-34\| \square \|37\|$
8.	$\|-84\| \square \|-81\|$	$\|103\| \square \|-98\|$	$\|-138\| \square \|-157\|$

List in order from least to greatest.

	a	*b*
9.	$-5, 7, \|-9\|, 0$ _____	$\|-3\|, -8, 5, \|-7\|$ _____
10.	$0, \|5\|, -7, \|-6\|$ _____	$-11, 10, \|-9\|, 11$ _____

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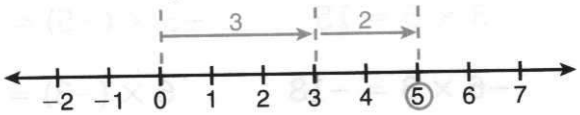
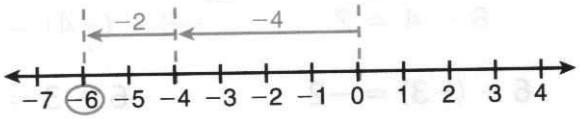
ALGEBRA READINESS
Adding and Subtracting Integers

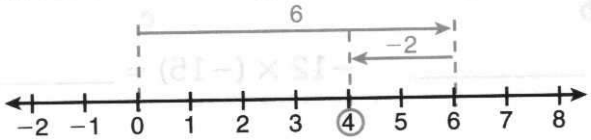
The sum of two positive integers is a **positive** integer. $3 + 2 = 5$



The sum of two negative integers is a **negative** integer. $-4 + (-2) = -6$



To add integers with different signs, **subtract** their absolute values. Give the result the same sign as the integer with the greatest absolute value. $6 + (-2) = 4$



To subtract an integer, **add** its opposite.
The subtraction problem $-8 - 3 = -11$ can be rewritten as the addition problem $-8 + (-3) = -11$. -3 is the opposite of 3.

Add.

	a	*b*	*c*	*d*
1.	$7 + (-3) =$ 4	$5 + 3 =$ ____	$-9 + 4 =$ ____	$-6 + (-2) =$ ____
2.	$-12 + 9 =$ ____	$-4 + (-6) =$ ____	$3 + 18 =$ ____	$3 + (-9) =$ ____
3.	$-1 + (-6) =$ ____	$12 + 14 =$ ____	$8 + (-6) =$ ____	$-4 + 8 =$ ____
4.	$-12 + 0 =$ ____	$-14 + (-2) =$ ____	$0 + (-1) =$ ____	$14 + (-14) =$ ____
5.	$68 + (-42) =$ ____	$-97 + 38 =$ ____	$-16 + (-16) =$ ____	$48 + 52 =$ ____

Subtract.

6.	$8 - (-4) =$ 12	$10 - 6 =$ ____	$-8 - 5 =$ ____	$9 - (-6) =$ ____
7.	$21 - 15 =$ ____	$18 - (-9) =$ ____	$10 - (-5) =$ ____	$-6 - (-5) =$ ____
8.	$-4 - 9 =$ ____	$-8 - 6 =$ ____	$-12 - (-7) =$ ____	$5 - 11 =$ ____
9.	$16 - 31 =$ ____	$-8 - 12 =$ ____	$-4 - 0 =$ ____	$-5 - 2 =$ ____
10.	$2 - (-15) =$ ____	$-8 - (-18) =$ ____	$9 - (-17) =$ ____	$0 - 8 =$ ____

ALGEBRA READINESS

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ALGEBRA READINESS

Multiplying and Dividing Integers

The product of two integers with **like** signs is **positive.**
The product of two integers with **unlike** signs is **negative.**

$3 \times 5 = 15$ $\quad -3 \times (-5) = 15$

$-6 \times 3 = -18$ $\quad 6 \times (-3) = -18$

The quotient of two integers with **like** signs is **positive.**
The quotient of two integers with **unlike** signs is **negative.**

$8 \div 4 = 2$ $\quad -8 \div (-4) = 2$

$6 \div (-3) = -2$ $\quad -6 \div 3 = -2$

State whether each answer is positive or negative.

	a	*b*	*c*
1.	$18 \times (-7) =$ negative	$6 \times (-48) =$ _____	$-12 \times (-15) =$ _____
2.	$-18 \div (-9) =$ _____	$54 \div (-6) =$ _____	$-56 \div 7 =$ _____

Multiply or divide.

	a	*b*	*c*
3.	$8 \times (-9) =$ -72	$-9 \times (-6) =$ _____	$-12 \times 8 =$ _____
4.	$-56 \div (-7) =$ _____	$-54 \div 9 =$ _____	$96 \div (-8) =$ _____
5.	$11 \times (-8) =$ _____	$72 \div 9 =$ _____	$10 \times (-10) =$ _____
6.	$63 \div (-9) =$ _____	$-35 \div 5 =$ _____	$126 \times (-1) =$ _____
7.	$7 \times (-7) =$ _____	$235 \div (-1) =$ _____	$-634 \times 0 =$ _____
8.	$-64 \div (-8) =$ _____	$0 \div (-147) =$ _____	$-12 \times (-12) =$ _____

Write *true* or *false*. If false, state the reason.

9. The product of two positive integers is never negative. _____

10. The product of two negative integers is always negative. _____

11. The quotient of two negative integers is always positive. _____