

# U1D1-T Integers

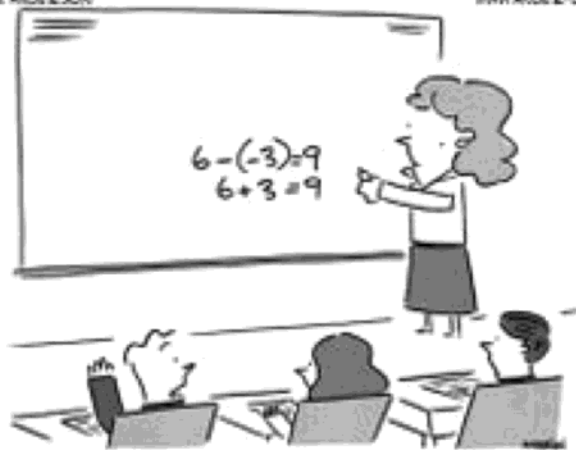
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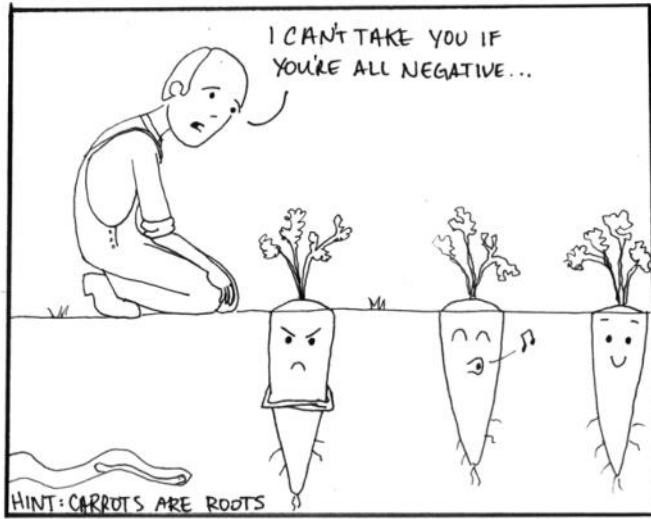
U1D1  
Integers

## Today's Lesson is a review of Integers

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"So in English a double negative is bad,  
but in math it's a positive?"

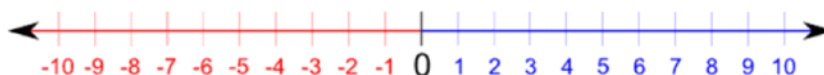


**UNIT 1: Grade 8 Review**  
**NO CALCULATORS THIS UNIT**  
**QUEST ON FRIDAY!!**

**U1D1 INTEGERS**

**What is an Integer?**

A number  
with no  
fractional  
part.



Includes:

- the counting numbers  $\{1, 2, 3, \dots\}$ ,
- zero  $\{0\}$ ,
- and the negative of the counting numbers  $\{-1, -2, -3, \dots\}$

We can write them all down like this:  $\{\dots, -3, -2, -1, 0, 1, 2, 3, \dots\}$

Examples of integers: -16, -3, 0, 1, 198

1. When adding and subtracting integers, we want to eliminate double signs and simplify the expression so that we have

Sign number sign number sign number...

It is like in grade 8 when you re-wrote subtraction as adding the opposite.

We think of it as always “adding” with the sign in front of the number attached to the number. For example:

$$\begin{array}{ccc} -5 + (+2) + (-3) - (-9) \\ \swarrow \quad \searrow & \swarrow \quad \searrow & \swarrow \quad \searrow \\ \text{double} & \text{double} & \text{double} \\ \text{Sign} & \text{sign} & \text{Sign} \\ + & - & + \end{array}$$

2. We want a single sign between numbers when we add/subtract integers. When two signs are "side - by - side" with NO numbers in between, we need to simplify the double signs into a single sign.

We simplify them into a single sign using the same rules as for multiplication:

$$- (-) = +$$

$$+ (+) = +$$

$$- (+) = -$$

$$+ (-) = -$$

Example:  $-5 + (+2) + (-3) - (-9) =$

in grade 8 was written as:

$$\begin{array}{ccccccc} -5 & + & (+2) & + & (-3) & + & (+9) & = \\ & & \downarrow & & \downarrow & & \downarrow & \\ & & + & & - & & + & \end{array}$$

but in grade 9 we just write:

$$\begin{array}{l} -5 + 2 - 3 + 9 \\ = 11 - 8 = 3 \end{array}$$



Example 1: Find each sum

a)  $5 + (-2) = 5 - 2 = 3$  ✓  
 b)  $3 + (-7) = 3 - 7 = -4$  ✓  
 c)  $-7 + (-6) = -7 - 6 = -13$   
 d)  $-4 + 10 = 6$



Example 2: Find each difference:

a)  $15 - 6 = 9$   
 b)  $-7 - 2 = -9$   
 c)  $8 - (-8) = 8 + 8 = 16$

d)  $-2 - (-11) = -2 + 11 = 9$

e)  $-7 - (-3) - 6 = -7 + 3 - 6 = -4 - 6 = -10$

Example 3: Find each product:

a)  $(-5)(3) = -15$   
 b)  $6(-7) = -42$   
 c)  $(-3)(-8) = 24$

*If you forget  $6 \times 7$  ... try  $2 \times 3 \times 7 = 2 \times 21$*

d)  $(-8)(-4)(-3)(-1) = 32 \times 3 = 96$

e)  $(-7)(-3)(-5) = -21 \times 5 = -105$

Example 4: Evaluate the following:

a)  $-24 \div 6 = -4$

b)  $\frac{-60}{-12} = 5$

c)  $\frac{26}{2} = 13$

d)  $\frac{-56}{8} + \left(\frac{-96}{12}\right) = -7 + 8 = 1$

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- digital textbook
- Web Math Minute link (mental math)
  
- Student Information opportunity
- Quiz on google forms now to see how you are doing so far ... do that now.