Lesson 14: Absolute Value Meaning

- Let's investigate absolute values.

14.1: Math Talk: Closest to Zero

For each pair of values, decide mentally which one has a value that is closer to 0.

$-\frac{4}{5}$ or $\frac{5}{4}$

$\frac{1}{12}$ or $\frac{1}{14}$

-0.001 or 0.0001

1.3 or $\frac{4}{3}$

14.2: What is Absolute Value?

1. One of the lowest places in Europe is 23 feet below sea level. We can use "-23 feet" to describe its elevation, and "|-23| feet" to describe its vertical distance from sea level. In the context of elevation, what would each of the following numbers describe?
   a. 37 feet

   b. |37| feet

   c. -6 feet

   d. |-6| feet

2. Water freezes at 0 degrees Celsius. For each pair of temperatures, which temperature is closest to the freezing point of water? Use absolute value to explain your reasoning.
   a. 14°C or -15°C

   b. -5°C or -2°C

c. -12°C or 18°C

14.3: Absolute Value Expressions

Find the value of these expressions.

1. $|10 - 12|$

2. $|\text{-}16 + 5|$

3. $3|9 - 4|$

4. $|8 - 10| - 16$

5. $2|\text{-}13 - 2| + 18$

6. $9 - |19 + 3|$