

KEY CONCEPT OVERVIEW

In Topic B, students put integers and other rational numbers in order, locate them on the number line, and compare them. They also write and interpret **inequality** statements. The topic wraps up by asking students to use **absolute value** to find the **magnitude** of a positive or negative number in a real-world situation.

You can expect to see homework that asks your child to do the following:

- Put a list of numbers, their opposites, and their absolute values in order.
- Identify the numbers that are farthest to the left or farthest to the right on a horizontal number line (highest or lowest on a vertical number line).
- Write a story relating integers and other rational numbers to real-life situations.
- Write an inequality.
- Compare the magnitudes of various numbers.

SAMPLE PROBLEM (From Lesson 13)

During the summer, Madison monitors the water level in her parents' swimming pool to make sure it is not too far above or below normal. The table below shows the numbers she recorded in July and August to represent how the water levels compared to normal. Order the rational numbers from least to greatest. Explain why the rational numbers that you chose appropriately reflect the given water levels.

Madison's Readings	$\frac{1}{2}$ inch above normal	$\frac{1}{4}$ inch above normal	$\frac{1}{2}$ inch below normal	$\frac{1}{8}$ inch above normal	$1\frac{1}{4}$ inches below normal	$\frac{3}{8}$ inch below normal	$\frac{3}{4}$ inch below normal
Compared to Normal	$\frac{1}{2}$	$\frac{1}{4}$	$-\frac{1}{2}$	$\frac{1}{8}$	$-1\frac{1}{4}$	$-\frac{3}{8}$	$-\frac{3}{4}$

$$-1\frac{1}{4} < -\frac{3}{4} < -\frac{1}{2} < -\frac{3}{8} < \frac{1}{8} < \frac{1}{4} < \frac{1}{2}$$

The measurements are taken in reference to the normal level, which is considered to be 0. The words above normal refer to the positive numbers located above zero on a vertical number line, and the words below normal refer to the negative numbers located below zero on a vertical number line.

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

You can help at home in many ways. Here are some tips to help you get started.

- Have your child make integer cards by writing integers from -10 to 10 on note cards or flash cards, with one integer per card. Show the cards three at a time, and ask your child to put the integers in order from either least to greatest or greatest to least. When your child is comfortable ordering integers, make additional cards with rational numbers, including fractions and decimals, from -10 to 10 . Add these cards to the integer cards, and repeat the activity.
- Create a number line from -10 to 10 on the floor. (Tiled floors work great for this activity!) Using the cards from the activity above, choose one card, and have your child locate and stand on that number on the number line. Then, have your child move to that number's opposite. Discuss how far the number and its opposite are from zero. If a fraction or decimal is chosen, have your child estimate where that number is on the number line. For example, the number 7.4 would be slightly less than halfway between 7 and 8 .

TERMS

Absolute value: The distance between a number and zero on the number line, shown symbolically as $|a|$ (e.g., $|3| = 3$ or $|-4| = 4$).

Inequality: A statement comparing expressions that are unequal or not strictly equal. The symbol used to compare the expressions reveals the type of inequality: $<$ (less than), \leq (less than or equal to), $>$ (greater than), \geq (greater than or equal to), or \neq (not equal to).

Magnitude: The absolute value of the number in a measurement, that is, the distance between the number and zero on a number line. For example, the magnitude of the measurement -25°F is 25 .