

UNIT
3

Rational Numbers

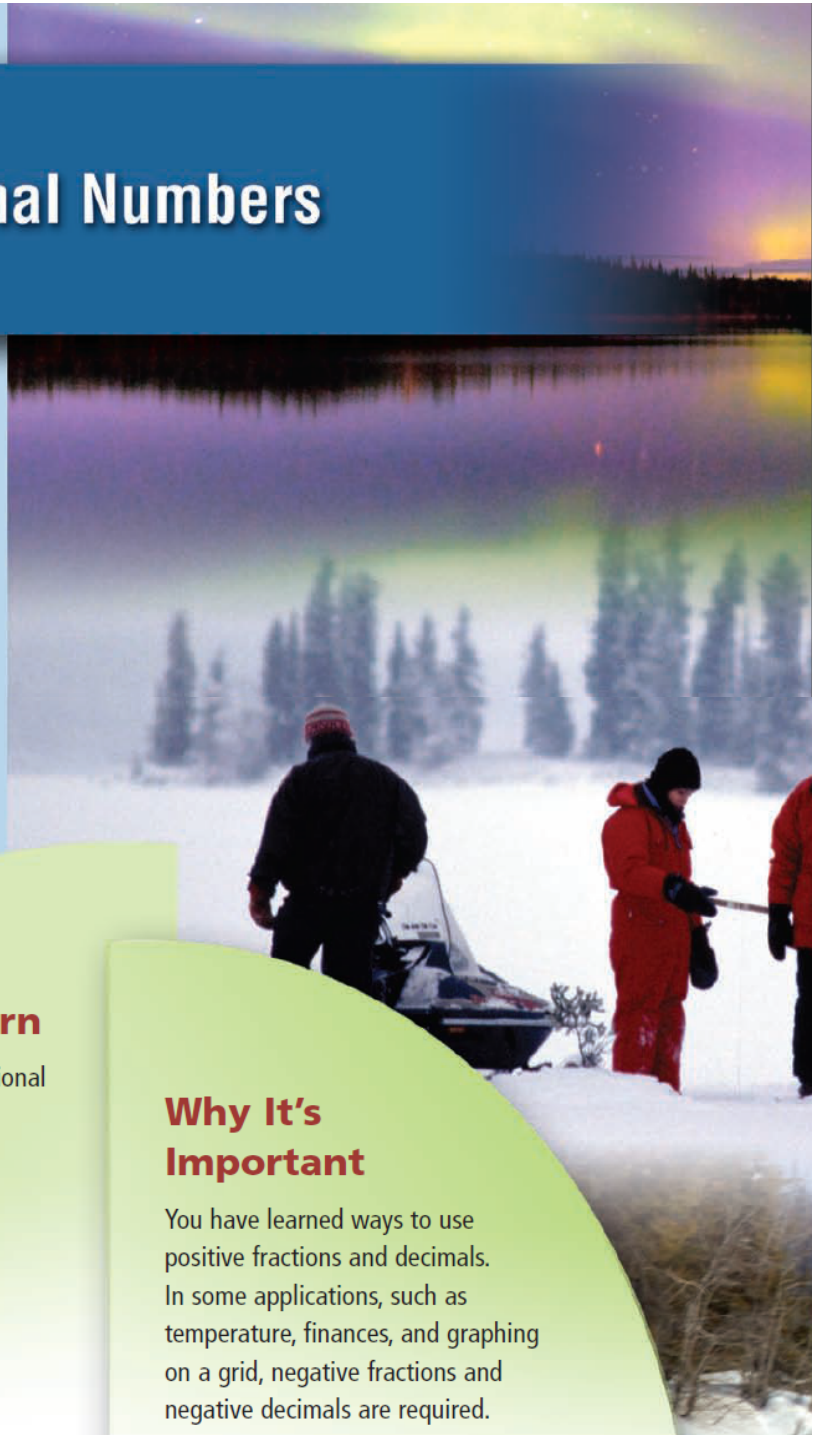
Suppose you are ice fishing on Blachford Lake, NWT. The temperature at midnight is -12°C . At 6 A.M. the next day, the temperature is -11°C . What must the temperature have been at some time during the night?

What You'll Learn

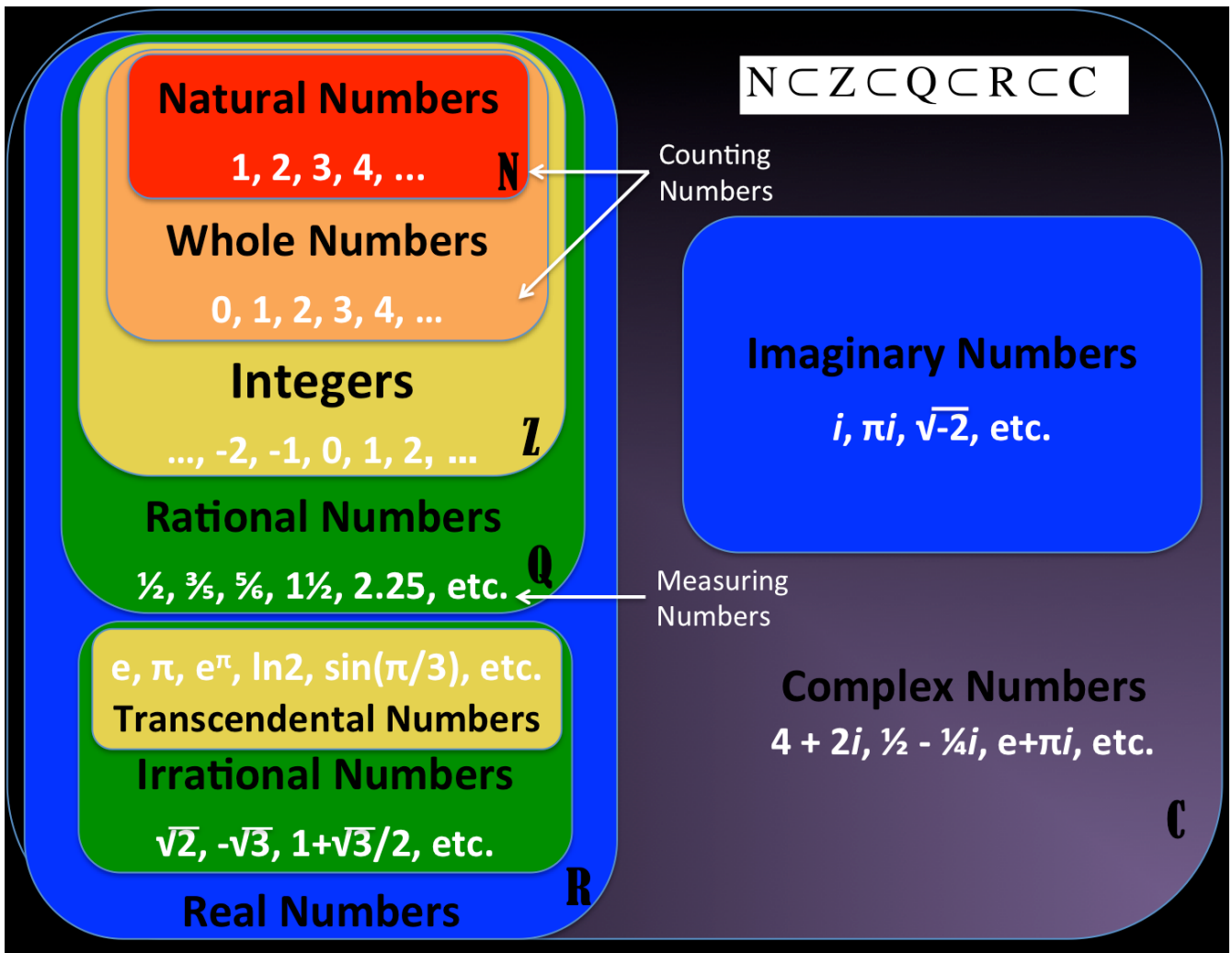
- Compare and order rational numbers.
- Solve problems by adding, subtracting, multiplying, and dividing rational numbers.
- Explain and apply the order of operations with rational numbers, with and without technology.

Why It's Important

You have learned ways to use positive fractions and decimals. In some applications, such as temperature, finances, and graphing on a grid, negative fractions and negative decimals are required.



Number Set in Mathematics



3.1

What Is a Rational Number?

► **Definition of a Rational Number**

A rational number is any number that can be written in the form $\frac{m}{n}$, where m and n are integers and $n \neq 0$.

$$\mathbf{Q} = \left\{ \frac{m}{n} \mid m, n \in I, n \neq 0 \right\}$$

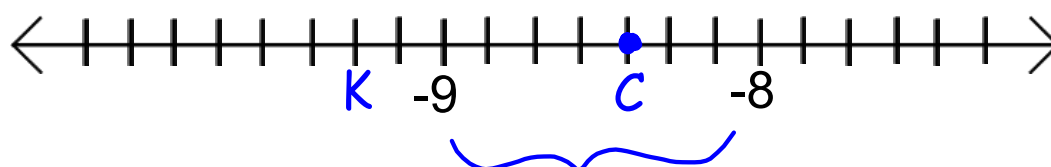
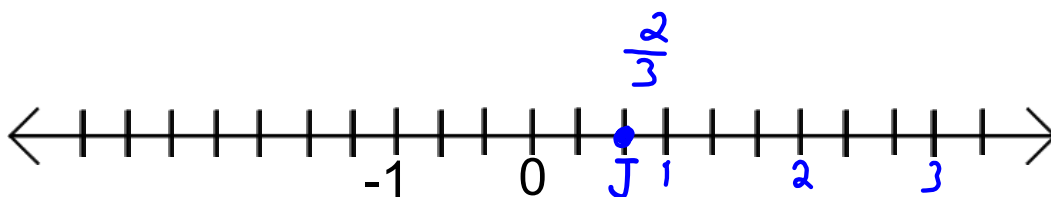
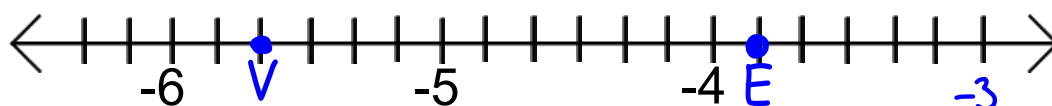
Reading that Math:

The rational numbers, \mathbf{Q} , are defined as, =, the set of all numbers, $\{\}$, that can be written as a fraction, $\frac{m}{n}$, where m and n are an element of, \in , the set of Integers, I , where n cannot equal, \neq , zero.

Math is wordy! Which is why symbols are used. Then the math can be read by anyone as the symbols are used internationally.

Number Lines

$$V = -5 \frac{4}{6} \quad E = -3 \frac{5}{6}$$



$$C = -8 \frac{3}{7} \quad K = -9 \frac{2}{7}$$