benchmark

A reference number that can be used to estimate the size of other numbers. For work with fractions, 0, $\frac{1}{2}$, and 1 are good benchmarks. We often estimate fractions or decimals with benchmarks because it is easier to do arithmetic with them, and estimates often give enough accuracy for the situation. For example, many fractions and decimals—such as $\frac{37}{50}$, $\frac{5}{8}$, 0.43, and 0.55—can be thought of as being close to $\frac{1}{2}$. You might say $\frac{5}{8}$ is between $\frac{1}{2}$ and 1 but closer to $\frac{1}{2}$, so you can estimate $\frac{5}{8}$ to be about $\frac{1}{2}$. We also use benchmarks to help compare fractions and decimals. For example, we could say that $\frac{5}{8}$ is greater than 0.43 because $\frac{5}{8}$ is greater than $\frac{1}{2}$ and 0.43 is less than $\frac{1}{2}$.

overestimate

To make an estimate that is slightly greater than the actual value.

underestimate

To make an estimate that is slightly less than the actual value.

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number sentence

A mathematical statement that gives the relationship between two expressions that are composed of numbers and operation signs. For example, 3+2=5 and 6×2>10 are number sentences; 3+2, 5, 6×2, and 10 are expressions.

algorithm

A set of rules for performing a procedure. Mathematicians invent algorithms that are useful in many kinds of situations. Some examples of algorithms are the rules for long division or the rules for adding two fractions.