

Averages Sample Lesson

- Lesson on Averages

The word average is very common in ordinary conversation. It is often used to describe what is ‘typical’ or ‘normal’. For example, we hear things like this:

The average fourth grader likes pizza better than hot dogs.

or

Mr. Smith is average height.

These descriptions can mean different things to different people because they don’t involve numbers.

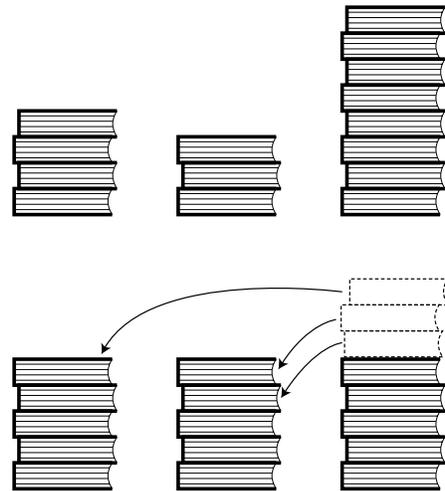
But there are also many familiar situations in which the word average does represent a number. For example, we often talk about average grades, average weights, average temperatures, batting averages, etc. In previous problems, you have encountered “scoring average” (#122), “average monthly savings” (#153), average number of cans per grade (#173.), and “average speed” (#198.).

In all of these cases, the average is the result of “leveling” a set of numbers. The mathematical name for this kind of average is the mean.

Example 1

Suppose we move books from one of the stacks to another, until all the stacks have the same number.

When we are done, all the stacks have 5 books. This tells us that the average (or mean) number of books in the original stacks is 5 books per stack.



Example 2

There are four baskets of oranges on a table. One basket contains 9 oranges, another contains 6 oranges, another contains 14 oranges, and the fourth basket contains 13 oranges.



What is the average (mean) number of oranges for the four baskets?

To answer the question, we could think about moving oranges from one basket to another until all the baskets had the same number. But there is a much easier way to find the answer: Find the total number of oranges in the four baskets, then separate that total into 4 equal shares!

$$9 + 6 + 14 + 13 \text{ is } 32, \text{ and } 32 \div 4 \text{ is } 8.$$

So the average (mean) number of oranges in the four original baskets is 8 oranges per basket.

Example 3

Tim made scores of 38, 44, and 47 on his last three math quizzes.

What is Tim's average (mean) score for these three quizzes?

- i. Find Tim's total points.
- ii. Divide the total points into 3 equal scores.
- iii. How much is each equal score? (This is the mean.)