



Problem of the Week

Problem A

One Room Schoolhouse

The terms *mean*, *median*, and *mode* are defined at the bottom of the page.

The following list of numbers represents the ages of students in the one-room schoolhouse in Muggleland:

7, 9, 15, 9, 14, 13, 14, 7, 6, 10, 12, 8, 15, 14, 12,
8, 7, 12, 12, 16, 14, 12, 7, 9, 10, 8, 12, 14, 11, 13

- (a) Are the mode and the median of this set of numbers the same?
Is this relationship the same for every set of numbers?
If so, see if you can explain why. If not, give a set of numbers where the relationship is different.
- (b) Are the median and the mean of this set of numbers the same?
Is this relationship the same for every set of numbers?
If so, see if you can explain why. If not, give a set of numbers where the relationship is different.



Mode refers to the most frequently occurring number in a data set. If there is a tie, then we assign more than one number as the modes of the data set.

Median refers to the middle number in a data set after the numbers have been arranged in order. If a data set has an even number of values, then there are two “middle numbers”. In this case we calculate the sum of the two numbers and divide by 2 to get the median of the data set.

Mean refers to the result of calculating the sum of the numbers in the data set and then dividing the sum by the number of values in the data set. This is what is commonly called the *average*.