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Lesson #5: Statistics Date: Nov. 17, 2017

Statistics is a branch of Mathematics. It deals with collecting data, organizing, and analyzing it, then finally interpreting, and presenting it. In this lesson, we will look at analyzing and presenting data.

There are many ways to analyze data, but we will focus our attention on the mean, median, and mode.

The mean is the average → $\frac{\text{adding up the numbers}}{\text{number of numbers}}$

The median is the middle number. → sort the numbers from least to greatest

The mode is the number which occurs the most.

↳ you can have no mode, one mode, two modes, etc....

Example 1: Test scores in a Math class were as follows: 78, 67, 85, 81, 90, 74, 95, 85, 80, 92. Calculate the mean, median, and mode.

Mean: $\frac{78+67+85+81+90+74+95+85+80+92}{10} = \frac{827}{10} = 82.7$

Median: 67, 74, 78, 80, 81, 85, 85, 90, 92, 95 $\frac{10}{2} = 5$

$\frac{81+85}{2} = 83$

Mode: 85

Example 2: Hits at a week's worth of baseball games were recorded as follows: 13, 16, 6, 10, 7, 8, 9. Calculate the mean, median and mode.

Mean: $\frac{13+16+6+10+7+8+9}{7} = \frac{69}{7} = 9.86$

Median: 6, 7, 8, 9, 10, 13, 16 $\frac{7}{2} = 3.5$

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Mode: no mode.

Pie Charts are a quick and useful way to present data. The first step, after organizing the data, is to calculate the percents for each category.

Example 3: Twenty people were asked to indicate their favourite movie genre. The results are in the table below. Calculate the percentages of each category, then create a pie chart.

Favourite Movie Genre		%
Comedy	4	$\frac{4}{20} = 0.2 = 20\%$
Romance	6	$\frac{6}{20} = 0.3 = 30\%$
Drama	1	$\frac{1}{20} = 0.05 = 5\%$
Sci-fi	4	$\frac{4}{20} = 0.2 = 20\%$
Action	5	$\frac{5}{20} = 0.25 = 25\%$
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