Math 9 – Unit 1: Real Numbers

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Lesson #5: Statistics

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Learning Goal: We are learning to collect, organize, analyze and display data

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. Add up all the numbers, divide by how many numbers there are.

The median is the middle number. First, order from least to greatest.
If odd list, median is the middle number.
If even, average the two middle #'s.

The mode is the most common, more than one.
- You would have no mode if each number occurs only once.

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: $\frac{\text{Sum}}{N} = \frac{827}{10} = 82.7$

Median: 67, 74, 78, 80, 81 | 85, 85, 90, 92, 95

$\frac{81+85}{2} = \frac{166}{2} = 83$

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: $\frac{\text{Sum}}{N} = \frac{69}{7} = 9.9$

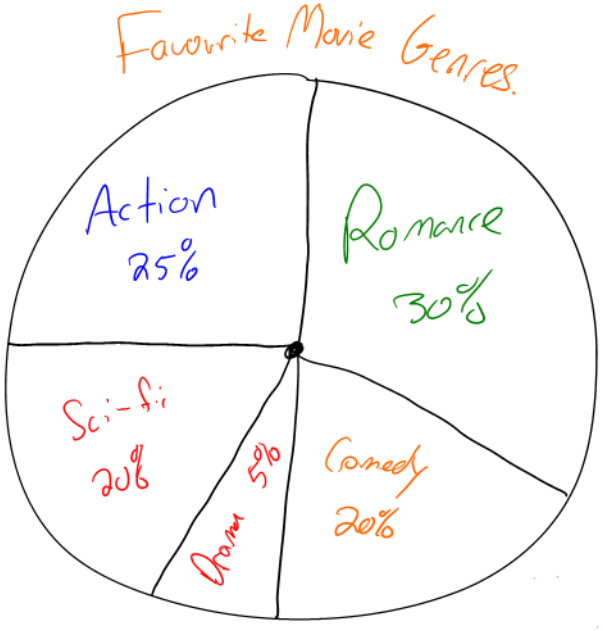
Median: 6, 7, 8, **9**, 10, 13, 16 (Median)

Mode: None!

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	$4/20 = 0.2 = 20\%$
Romance	6	$6/20 = 0.3 = 30\%$
Drama	1	$1/20 = 0.05 = 5\%$
Sci-fi	4	$4/20 = 20\%$
Action	5	$5/20 = 25\%$
	20	100%



Success Criteria:

- I can analyze data using mean, median, and mode
- I can display data using percentages and pie charts