Lesson 3 Assessment
Comparing Measures of Central Tendency

Comparing Measures of Central Tendency

Determines the mean and mode for a data set	Determines the median and range for a data set	Suggests and justifies the choice of measure to represent a data set	Identifies an outlier and explains its effect on the mean, median, and mode

14, 19, 23, 27, 28, 33
 	
The mean is:
  $(14 + 19 + 23 + 27 + 28 + 33) \div 6$
$= 144 \div 6$
$= 24$
There is no mode.
	14, 19, 23, 27, 28, 33
	
	The median is:
	  $(23 + 27) \div 2$
	$= 50 \div 2$
	$= 25$
	The range is:
	$33 - 14 = 19$
		A person spent these amounts for 4 weekly grocery bills:
		$174, $196, $205, $220
		
		There is no mode.
		In dollars, the mean is:
		  $(174 + 196 + 205 + 220) \div 4$
		$= 795 \div 4$
		$= 198.75$
		In dollars, the median is:
		$(196 + 205) \div 2 = 401 \div 2$
		$= 200.50$
		Since the mean and median are so close in value, either measure could represent the data.
			A student has these marks on English tests: 84, 72, 81, 72, 32
			The outlier is 32, because it is much less than the other numbers.
			With the outlier, the mean is:
			$(84 + 72 + 81 + 72 + 32) \div 5 = 341 \div 5$
			$= 68.2$
			The median is 72.
			The mode is 72.
			Without the outlier, the mean is:
			$(84 + 72 + 81 + 72) \div 4 = 309 \div 4$
			$= 77.25$
			The median is:
			$(72 + 81) \div 2 = 76.5$
			The mode is 72.
			
			The outlier affects the mean and median – it reduces both these measures. The outlier has no effect on the mode.

Observations/Documentation