

12-5 Misleading Statistics (Pages 630–633)

The same data can be used to support different points of view depending on how that data is displayed.

Looking for Misleading Graphs	<p>Here are some things to check as you decide if a graph is misleading.</p> <ul style="list-style-type: none"> • Is one of the axes extended or shortened compared to the other? • Are there misleading breaks in an axis? • Are all the parts of the graph labeled clearly? • Does the axis include zero if necessary? • If statistics are compared, do they all use the same measure of central tendency, or does one use the mean and another the median?
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Examples

a. What words do you need to put on your graphs?

Graphs need a title and labels on the scales for each axis.

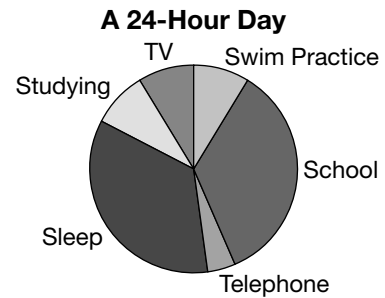
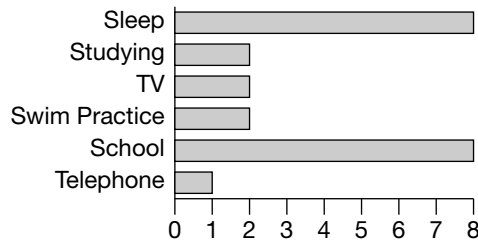
b. What do you check on the scales and the axis when you look for a misleading graph?

Make sure the axis includes 0 if it applies. Check that the distance between the units is uniform. Is the scale chosen to minimize or emphasize change?

Practice

A student made the table below and used it to make the bar graph and circle graph to the right of it.

A 24-Hour Day	
Activity	Hours
Sleep	8
Studying	2
TV	2
Swim Practice	2
School	8
Telephone	1



1. What is wrong with the data in the table?
2. What is missing on the bar graph? (*HINT*: Interpret the meaning of the School bar.)
3. What is missing in the circle graph?
4. Compare the visual effects of the bar graph versus the circle graph.
5. **Standardized Test Practice** Generally, the best measure of central tendency is—

<p>A the mode.</p> <p>C the median.</p>	<p>B the mean.</p> <p>D dependent on the data.</p>
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Answers: 1. The hours don't add up to 24. 2. title; unit of measure for the x-axis. 3. numerical data. 4. Answers will vary. 5. D