

Misleading Statistics (pages 119–121)

Statistics and graphs can be presented in ways that are misleading. For example, the mean is not a good way to describe a data set when there are outliers. Changing the scale of a graph may also make the graph misleading.

EXAMPLE

Darnell was notified that the raffle ticket he bought at the county fair was a winner. He was told that the average prize amount was almost \$4,000. Use the information at the right to explain why Darnell should not expect to win more than \$100.

There are only three prizes over \$100, and 50 prizes of \$100. Because of the large number of \$100 prizes, Darnell is most likely to win only \$100.

Raffle Prizes	
Prize	Amount
Grand Prize	\$100,000
First Prize (2 winners)	\$50,000
Second Prize (50 winners)	\$100

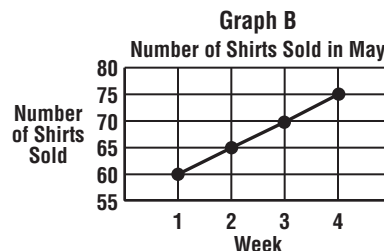
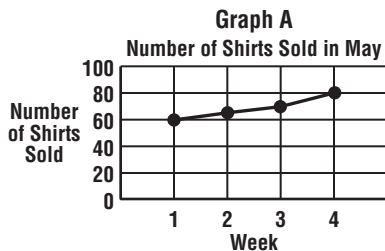
The average winner wins almost \$4,000!

Try This Together

1. Abigail's starting salary was \$47,000, three years ago. She has received a \$2,000 raise each year. Create a graph that makes her salary increases look more substantial than they actually are.

PRACTICE

2. The two line graphs show sales of T-shirts at The Tee Shop for May. Which graph could be misleading? Explain.



3. **Standardized Test Practice** The Italian Restaurant advertises huge meals. The sizes of many of their meals are shown in the table at the right. What misleading statistic might they be using to describe the serving sizes of their meals?

- A** mean **B** median
C mode **D** distorted facts

Meal	Serving Size (oz)
Spaghetti	10
Tortellini	12
Manicotti	14
Ravioli	11
Lasagna	15
Fettucine	32

Answers: 1. See Answer Key. 2. Graph B; the vertical scale starts from 55 instead of zero. It makes it look like sales increased more than they actually did. 3. A