Introduction to Statistics

1.2 Statistics vs. Parameters

1. **Would You Be Happier If You Were Richer?** A sample of people who earned less than $20,000 per year revealed they were in a bad mood approximately 32% of the time. Is this percentage a statistic or a parameter?

2. **Voting:** In 2008, 62% of the voting-eligible population (VEP) voted in the presidential election.

3. **Presidential Height:** The average height of the 43 men who have been President is 70.8 inches (180 cm).

4. **Heights:** The average height of male Americans nationwide in 2005 was 5 ft 9.2 in (69.2 in; 175.8 cm).

5. **The Height Advantage:** according to Slate magazine, **"**Multiple studies have found that an extra inch of height can be worth an extra $1,000 a year or so in wages, after controlling for education and experience. If you're 6 feet tall, you probably earn about $6,000 more than the equally qualified 5-foot-6-inch shrimp down the hall."

Answers:

1. It's a <u>statistic</u> because the percentage was derived from a sample of people.
2. This is a population <u>parameter</u> because it is derived from the entire population of votes cast and potential voters. For example, it isn't taken from just a sample of precincts. The data which led to the percent was derived from the full voting record.
3. This is a <u>parameter</u> since they averaged the heights of every US president (until that moment in time).
4. There is no way this average could have been taken from every single member of the male population, so it is a <u>statistic</u>.
5. This is a <u>statistic</u> since they would have derived this $1000 per inch fact from sample data. They couldn't have surveyed every working adult.