Name _____ Date _____

1. A data set has a normal distribution with a mean of 31 and a standard deviation of 7. About what percent of the data are between 17 and 45?

2. Determine whether the histogram has a normal distribution.

**Ages of Audience Members**
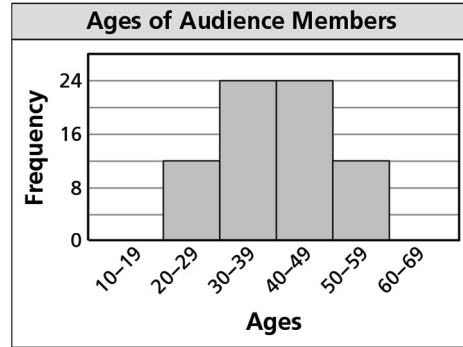


3. In a state, a survey of 1306 adults ages 18 and over found that 693 of them support a certain candidate. Identify the population and the sample.

4. You want to estimate the number of students in your school who support extra funding for the math club. You survey the first 10 students who arrive at a math class. Determine whether the sample is *biased* or *unbiased*.

5. You flip a coin 4 times and do not get a tails. You suspect this coin favors heads. The coin maker claims that the coin does not favor heads or tails. You use technology to simulate 200 random samples of flipping a coin 50 times. The histogram shows the results. What should you conclude when you flip the actual coin 50 times and get 25 heads?

**Simulation: Flipping a Coin 50 Times**
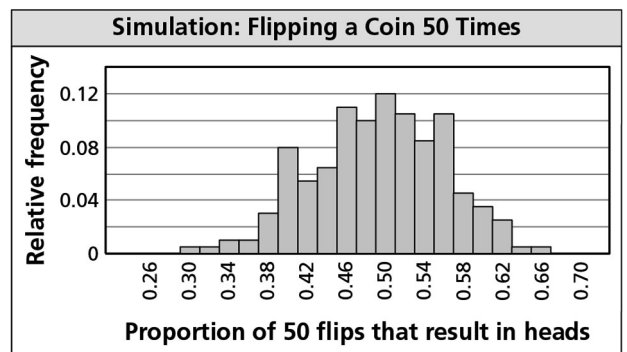


6. The scores on a science test are normally distributed with a mean of 80 and a standard deviation of 10. You randomly select a test score $x$. Find $P(|x - \mu| \geq 15)$.

Chapter
9

## Quiz
**For use after Section 9.6**

1. The numbers of friends for a random sample of 40 teen users of a social networking website are shown in the table. Estimate the population mean $\mu$. Round your answer to the nearest whole number.

| Number of Friends | | | | | | | |
|---|---|---|---|---|---|---|---|
| 328 | 290 | 314 | 336 | 385 | 295 | 273 | 271 |
| 330 | 263 | 358 | 245 | 426 | 231 | 302 | 354 |
| 264 | 202 | 359 | 401 | 326 | 276 | 461 | 241 |
| 324 | 386 | 294 | 297 | 336 | 316 | 367 | 236 |
| 278 | 307 | 166 | 358 | 366 | 341 | 400 | 303 |

2. In a survey of 2150 adults in a city, 70% said that they rate the city as a good place to live. Give an interval that is likely to contain the exact percent of adults in the city who rate the city as a good place to live.

3. To test a new drug for treating an ailment, a pharmaceutical company divided 150 adult volunteers into two groups, a male group and a female group. One group received the drug and one group received a placebo. After one month, the adults who took the drug were 28% less likely to experience symptoms, while those who took the placebo experienced no significant change. Is the study a randomized comparative experiment? Explain why or why not.

4. A national polling company claims that 66% of U.S. adults are concerned about the environment. You survey a random sample of 50 adults. Use the results from the simulation.

   **Simulation: Polling 50 Adults**

   

   Proportion of 50 adults who are concerned about the environment
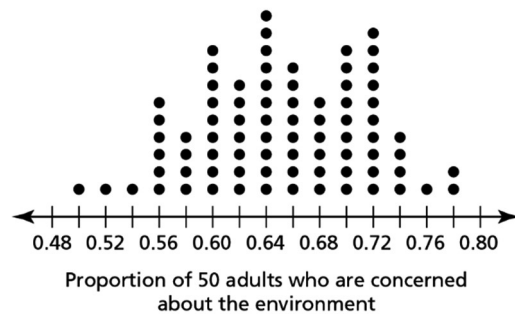
   a. What can you conclude about the accuracy of the claim that the population proportion is 0.66 when 32 adults in your survey are concerned about the environment?

   b. What can you conclude about the accuracy of the claim that the population proportion is 0.66 when 27 adults in your survey are concerned about the environment?