Hour-Exam on Friday, July 26

- Covers material in Chapters 4, 5, and 6
- Bring #2 pencil and picture ID.
- You may use a calculator.
- You may NOT use cell phones or other wireless devices.
- You may NOT use books or notes.
- There will be room on the exam paper for calculations.

1. A pair of fair dice are rolled. What is the probability that the sum of the values on the dice is six?

A) 1/6 B) 1/9 C) 1/11 D) 5/36

2. In a poll of 1689 voters, 61% said they favored increased funding for Pell grants. Find a 95% confidence interval for the true population proportion.

$$\text{margin of error} = 2\sqrt{\frac{(0.61)\times(0.39)}{1689}} \approx 0.024 = 2.4\%$$

A) 59.0% to 63.0%
B) 58.2% to 63.8%
C) 58.6% to 63.4%
D) 59.8% to 62.2%

3. The exam scores of thirteen students are listed below:

34, 65, 78, 76, 92, 81, 54, 78, 72, 85, 43, 90, 82

Find the five-number summary for these data.

34, 43, 54, 65, 72, 76, 78, 78, 81, 82, 85, 90, 92

A) 34, 65, 78, 82, 92

B) 34, 59.5, 78, 83.5, 92

C) 34, 54, 77, 82, 92

D) 34, 59.5, 77, 83.5, 92

4. A game involves tossing three coins. You win \$1 for one head, \$2 for two heads, and \$3 for three heads, but lose \$10 if the toss results in three tails. What are your expected winnings?

$$\left(1 \times \frac{3}{8}\right) + \left(2 \times \frac{3}{8}\right) + \left(3 \times \frac{1}{8}\right) + \left(-10 \times \frac{1}{8}\right) = \frac{2}{8}$$

A) \$0.25 B) \$0 C) – \$0.50 D) – \$1

5. A card is drawn at random from a standard 52-card deck. Find the probability that the card is a spade or a queen.

$$\frac{13}{52}+\frac{4}{52}-\frac{1}{52}=\frac{16}{52}$$

A) 17/52 B) 4/13 C) 7/26 D) 1/52

6. A card is drawn at random from a standard 52-card deck. Find the probability that the card is neither a spade nor a queen.

$$1-\frac{4}{13}=\frac{9}{13}$$

A) 51/52 B) 9/13 C) 4/13 D) 35/52

7. A flashlight manufacturer sets aside a production line for the assembly of 2000 flashlights to fill a special order. Ninety of these flashlights are selected at random from the production line to be tested, and 15 are found to be defective. The population is

A) the 15 defective flashlights.
B) the 90 flashlights tested.
C) the 2000 flashlights produced for this order.
D) all flashlights produced by the manufacturer

8. Find the standard deviation for the following data:

2, 3, 5, 6, 7, 13 (mean = 6)

$$\sqrt{\frac{(2-6)^2+(3-6)^2+(5-6)^2+(6-6)^2+(7-6)^2+(13-6)^2}{5}}$$

$$=\sqrt{\frac{76}{5}}$$

A) 7.6 B) 5.7 C) 3.6 D) 3.9

9. You are interested in knowing whether customers who use web-based technical support for your company's product are satisfied with the help they get. At the end of each support session, a customer satisfaction poll is made available to each customer. This study involves

A) participation bias. B) selection bias.
C) participation and selection bias. D) no bias.

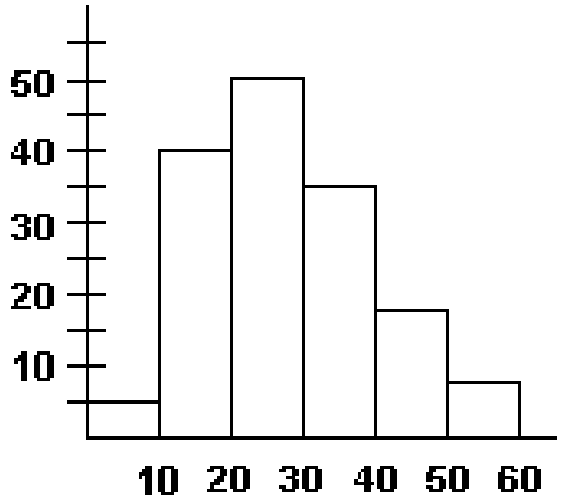
10. A study finds that the heights of adult American women are normally distributed with a mean of 63.5 inches and a standard deviation of 2.5 inches. What percentage of adult American women are taller than 68.5 inches?

$$z = \frac{68.5 - 63.5}{2.5} = 2$$

A) 2.5% B) 5% C) 16% D) 47.5%

(use 68-95-99.7 rule)

11. The distribution given by the histogram below is



A) unimodal and symmetric.
B) bimodal and skewed to the left.
C) unimodal and skewed to the right.
D) unimodal and skewed to the left.

12. Two marbles are drawn without replacement from a box with 5 white, 2 red, and 4 blue marbles. Find the probability that the first marble is red and the second is blue.

A) 6/11 B) 8/121 C) 3/55 D) 4/55

$$P(\text{first is red}) \times P(\text{second is blue}|\text{first is red})$$
$$= \frac{2}{11} \times \frac{4}{10} = \frac{8}{110}$$

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