

- 5) You roll a die until you get a 5 or a 6. What is the variance of this distribution?
- A) 6
 - B) 3
 - C) $\frac{1}{3}$
 - D) 8
 - E) 12

- 6) A back to back stem and leaf plot compares the heights of the players of two basketball teams. All heights in the plot below are in inches.

Team A		Team B
	6	8 9
1 4 4 4 5 8 9	7	2 3 6 6 6 8 9
1 1 2 4	8	2 5 6

- A) The means of the two distributions are the same.
 - B) The medians of the two distributions are the same.
 - C) The ranges of the two distributions are the same.
 - D) The distributions have the same number of observations.
 - E) None of the statements above is correct.
- 7) A nutritional consulting company is trying to find what percentage of the population of a town is overweight. The marketing department of the company contacts by telephone 600 people from a list of the entire town's population. All 600 people give answer to the survey. Which of the following is the most significant source of bias in this survey?
- A) Size of sample
 - C) Voluntary Response Bias
 - D) Nonresponse
 - B) Undercoverage
 - E) Response Bias
- 8) Which of the following are true statements?
- I. All bell-shaped distributions are symmetric.
 - II. Bar charts are useful to describe quantitative data.
 - III. Cumulative frequency plots are useful to describe quantitative data.
- A) I only
 - B) I and II only
 - C) II and III only
 - D) I and III only
 - E) I, II, and III

- 9) The mean number of points per game scored by basketball players during a high school championship is 9.4, and the standard deviation is 1.5. Assuming that the number of points are normally distributed, what number of points per game will place a player in the top 15% of players taking part in the basketball championship?
- A) 9.10 points per game
B) 10.57 points per game
C) 10.95 points per game
D) 12.35 points per game
E) 13.96 points per game

10) A residual plot:

- A) Displays residuals of the response variable versus the independent variable.
B) Displays residuals of the independent variable versus the response variable.
C) Displays residuals of the independent variable versus residuals of the response variable.
D) Displays the independent variable versus the response variable.
E) Displays the response variable versus the dependent variable.

11) For any A and B random variables, which of the following statements must be true?

I. $\mu_{A+B} = \mu_A + \mu_B$

II. $\sigma_{A-B}^2 = \sigma_A^2 + \sigma_B^2$

III. $\sigma_{A+B}^2 = \sigma_A^2 - \sigma_B^2$

- A) I only
B) II only
C) I and II
D) II and III
E) I, II, and III

12) A random sample of 1000 balances in the retirement accounts of exempt employees of a company has a sample mean of $\mu_1 = \$100,000$ and a standard deviation of $\sigma_1 = \$12,000$. A random sample of 4000 balances in the retirement account of hourly employees of the same company has a sample mean of $\mu_2 = \$80,000$ and a standard deviation $\sigma_2 = \$14,000$. If X is the sampling distribution of the differences in account balances of the two categories of employees, what is σ_x ?

- A) \$439.32
B) \$2657.60
C) \$5490.90
D) \$11,065.00
E) \$13,000.00

13) Four children are asked to pick their favorite ice cream flavor out of 8 different flavors, and each of them is equally likely to pick any of the eight ice cream flavors. What is the probability that each child orders a different ice cream type?

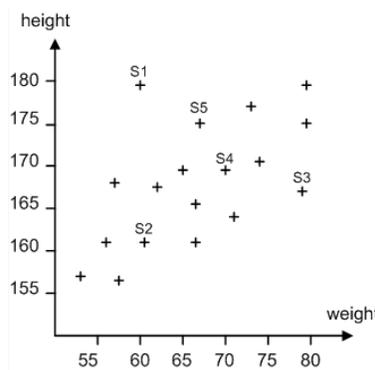
- A) $\frac{5}{72}$
B) $\frac{2}{5}$
C) $\frac{7}{64}$
D) $\frac{105}{256}$
E) $\frac{45}{128}$

- 18) Out of the 500 students of a school, 30% wear glasses. If we use a simple random sample of 25 students, which of the following statements is correct:
- A) The sampling distribution is small relative to the population.
 - B) The sampling distribution is a skewed distribution.
 - C) The sampling distribution is normal.
 - D) The mean of the sampling distribution is equal to 0.3.
 - E) None of the above.

- 19) The mean of the weights of a group of 100 men and women is 160 lb. If the number of men in the group is 60 and the mean weight of the men is 180 lb, what is the mean weight of the women?
- A) 120 lb
 - B) 125 lb
 - C) 130 lb
 - D) 132 lb
 - E) 135 lb

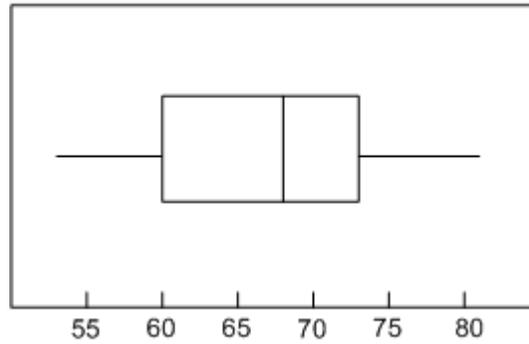
- 20) A real estate agent finds home buyers and closes the sale for 70% of his clients that sell their houses. What is the mean number of sales for his next 10 clients and what is the standard deviation of this distribution?
- A) Mean: 7; Standard Deviation: 1.45
 - B) Mean: 7; Standard Deviation: 2.5
 - C) Mean: 10; Standard Deviation: 1.45
 - D) Mean: 10; Standard Deviation: 2.5
 - E) Mean: 7; Standard Deviation: 1.33

- 21) The height and the weight of 18 students were measured and a scatterplot of the measures is shown below. If two pairs of measurements need to be removed from the set of 18, which of the choices shown below decreases the coefficient of correlation the most?



- A) S_2 and S_3 .
- B) S_2 and S_5 .
- C) S_1 and S_3 .
- D) S_2 and S_4 .
- E) S_1 and S_2 .

- 22) It takes different times for different workers to perform the same specific task, as it is shown in the distribution below. The boxplot displays time in minutes. Which of the following statements must be true?



- A) The 25th percentile is greater than 70 minutes.
 B) The distribution is skewed to the left.
 C) The interquartile range is higher than 20 minutes.
 D) Distribution median < distribution mean
 E) Distribution median = distribution mean
- 23) Six fruit baskets contain peaches, apples, and oranges. Three of the baskets contain two apples and one orange each, two other baskets contain three apples and one peach each, and the last basket contains two peaches and two oranges. You select a basket at random and then select a fruit at random from the basket. What is the probability the fruit is an apple?
- A) 0.32
 B) 0.4
 C) 0.46
 D) 0.5
 E) 0.58
- 24) In a game, a spinner with five equal-sized spaces is labeled from A to E. If a player spins an A, they win 15 points. If any other letter is spun the player loses 4 points. What is the expected gain or loss from playing 40 games?
- A) Gain of 360 points
 B) Gain of 55 points
 C) Gain of 8 points
 D) Loss of 1 point
 E) Loss of 8 points
- 25) Let X be a random variable whose distribution is normal with mean 30 and standard deviation 4. Which of the following is equivalent to $P(X \geq 26)$?
- A) $P(X < 34)$
 B) $P(X \leq 26)$
 C) $P(26 \leq X \leq 34)$
 D) $1 - P(X \leq 34)$
 E) $P(X \geq 34)$

Chapter 2-7 Review Answers

- 1) D
- 2) C
- 3) C
- 4) E
- 5) A
- 6) E
- 7) E
- 8) D
- 9) C
- 10) A
- 11) C
- 12) A
- 13) D
- 14) B
- 15) E
- 16) E
- 17) B
- 18) B
- 19) C
- 20) A
- 21) D
- 22) B
- 23) E
- 24) E
- 25) A