

MULTIPLE CHOICE. Choose the best that completes the statement or answers the question.

- 1) The percentile corresponding to a given data value X is computed by adding the 0.5 to number of values less than X then dividing by the total number of values in the data set. 1) _____
A) True B) False

- 2) Indicate which student has the higher z score. 2) _____

Art Major $X = 46$ $\bar{X} = 50.5$ $s = 5.2$

Theater Major $X = 70$ $\bar{X} = 75.1$ $s = 7.3$

- A) Neither student received a positive score; therefore, the higher score cannot be determined.
B) The art major has a higher score than the theater major.
C) Both students have the same score.
D) The theater major has a higher score than the art major.
- 3) A baseball player has a batting average of 0.325 each week of the season, with a standard deviation of 0.065. What is the z score when he bats 0.410 one week? 3) _____
A) 1.308 B) 1.275 C) 0.410 D) 0.325

- 4) What is the set of all possible outcomes of a probability experiment? 4) _____
A) the sample space B) an outcome
C) a Venn diagram D) events

- 5) The average weekly earnings in dollars for various industries are listed below. Find the percentile rank of 683. 5) _____
755, 683, 604, 706, 649, 729, 800, 547, 821, 851
A) 45th B) 40th C) 25th D) 35th

- 6) How many possible outcomes would there be if three coins were tossed once? 6) _____
A) 6 B) 8 C) 4 D) 2

- 7) Nanette must pass through three doors as she walks from her company's foyer to her office. Each of these doors may be locked or unlocked. 7) _____

List the outcomes of the sample space.

- A) {LLL, LLU, LUL, LUU, ULL, ULU, UUL, UUU}
B) {LLL, UUU}
C) {LLU, LUL, ULL, UUL, ULL, LUU}
D) None of these.

- 8) Nanette must pass through three doors as she walks from her company's foyer to her office. Each of these doors may be locked or unlocked. 8) _____

Let A be the event that all three doors are in the same condition. List the outcomes of A . [Let "L" designate "locked" and U" designate "unlocked".]

- A) {LLL}
- B) {LLL, UUU}
- C) {LLL, LLU, LUL, LUU, ULL, ULU, UUL, UUU}
- D) None of these.

- 9) Nanette must pass through three doors as she walks from her company's foyer to her office. Each of these doors may be locked or unlocked. 9) _____

Let B be the event that exactly two doors are in the same condition. List the outcomes of B . [Let "L" designate "locked" and U" designate "unlocked".]

- A) {LLL, LLU, LUL, LUU, ULL, ULU, UUL, UUU}
- B) {LLU, LUL, ULL}
- C) {LLU, LUL, ULL, LUU, ULU, UUL}
- D) None of these.

- 10) If the probability that it will rain tomorrow is 0.39, what is the probability that it will not rain tomorrow? 10) _____
- A) 1.39 B) -0.39 C) 0.61 D) 0.39

- 11) Tree diagrams are useful for 11) _____
- A) finding all possible outcomes in a probability experiment involving several steps.
 - B) ordering outcomes from lowest to highest.
 - C) showing that the outcome is the set of all possible sample spaces.
 - D) illustrating the law of large numbers.

- 12) Find the probability of getting a number greater than 4 when a die is rolled one time. 12) _____
- A) $\frac{1}{3}$ B) $\frac{1}{2}$ C) $\frac{2}{3}$ D) $\frac{1}{6}$

- 13) If two dice are rolled one time, find the probability of getting a sum of 6. 13) _____
- A) $\frac{1}{12}$ B) $\frac{1}{6}$ C) $\frac{5}{36}$ D) $\frac{7}{36}$

- 14) In a poll of 416 university students, 170 said that they were opposed to legalizing marijuana. What is the probability that a surveyed student opposes legalization of marijuana? 14) _____
- A) 0.409 B) 0.691 C) 0.309 D) 0.591

- 15) A section of an exam contains two multiple-choice questions, each with three answer choices (listed "A", "B", and "C"). Assuming the outcomes to be equally likely, find the probability (as a reduced fraction) that both answers are "C". [Hint: List all the outcomes of the sample space first.] 15) _____
 A) $1/6$ B) $1/27$ C) $1/9$ D) $1/3$
- 16) A section of an exam contains two multiple-choice questions, each with three answer choices (listed "A", "B", and "C"). Assuming the outcomes to be equally likely, find the probability (as a reduced fraction) that at least one answer is "A". [Hint: List all the outcomes of the sample space first.] 16) _____
 A) $2/3$ B) $5/9$ C) $7/9$ D) $1/3$
- 17) At a certain college, there were 700 science majors, 300 engineering majors, and 500 business majors. If one student was selected at random, the probability that the student is an engineering major is 17) _____
 A) $\frac{1}{4}$ B) $\frac{1}{5}$ C) $\frac{4}{5}$ D) $\frac{1}{3}$
- 18) At Wassamatta University, 59.3% of the student body are males. Choose one student at random. What is the probability that the student is female? 18) _____
 A) 59.3% B) -9.3% C) 50% D) 40.7%
- 19) A single card is drawn from a deck. Find the probability of selecting a heart or a 8. 19) _____
 A) $\frac{4}{13}$ B) $\frac{17}{52}$ C) $\frac{2}{13}$ D) $\frac{1}{4}$
- 20) If one card is drawn from an ordinary deck of cards, what is the probability that the card will be an ace, a king of hearts, or a spade? 20) _____
 A) $\frac{19}{52}$ B) $\frac{17}{52}$ C) $\frac{9}{26}$ D) $\frac{11}{26}$
- 21) Out of 733 items checked out of a public library, 269 were fiction books, 222 were non-fiction books, and 242 were videos (of any genre). What is the probability that a randomly-selected item was not a video? 21) _____
 A) 0.67 B) 0.367 C) 0.33 D) 0.493
- 22) In a recent semester at a local university, 500 students enrolled in both General Chemistry and Calculus I. Of these students, 66 received an A in general chemistry, 73 received an A in calculus, and 33 received an A in both general chemistry and calculus. Find the probability that a randomly chosen student received an A in general chemistry or calculus or both. 22) _____
 A) 0.278 B) 0.763 C) 0.344 D) 0.212

- 23) If $P(A) = 0.46$, $P(B) = 0.5$, and A and B are mutually exclusive, find $P(A \text{ or } B)$. 23) _____
 A) 0 B) 0.48 C) 0.04 D) 0.96
- 24) What is the correct relationship between events A and B : 24) _____
 A: Karl is college graduate.
 B: Karl is a high school graduate.
- A) A and B are mutually exclusive. B) B is the complement of A .
 C) A and B are not mutually exclusive. D) If B is not true, A cannot be true.
- 25) If $P(A) = 0.38$, $P(B) = 0.33$, and $P(A \text{ and } B) = 0.24$, find $P(A \text{ or } B)$. 25) _____
 A) 0.12 B) 0.355 C) 0.47 D) 0.24
- 26) What is the correct relationship between events A and B : 26) _____
 A: Laura participated in an out-of-town volleyball game at 11:00 AM last Friday.
 B: Laura met with her academic advisor on campus at 11:00 AM last Friday.
- A) A and B are mutually exclusive. B) A and B are complementary.
 C) A and B are not mutually exclusive. D) If B is true, A is true.
- 27) What is the correct relationship between events A and B : 27) _____
 A: Kathleen made an A on her Biology final exam.
 B: Kathleen did not make an A on the Biology final exam.
- A) A and B are mutually exclusive. B) A and B are complementary.
 C) A and B are not mutually exclusive. D) If B is untrue, A is untrue.
- 28) Let A and B be events with $P(A) = 0.5$, $P(B) = 0.4$. Assume that A and B are 28) _____
 independent. Find $P(A \text{ and } B)$.
 A) 0.8 B) 0.5 C) 0.4 D) 0.2
- 29) A fair die is rolled four times. What is the probability that it comes up 1 at least once? 29) _____
 A) 0.1667 B) 0.8333 C) 0.4213 D) 0.5177
- 30) An unfair coin has a probability 0.6 of landing heads. The coin is tossed four times. 30) _____
 What is the probability that it lands heads at least once?
 A) 0.784 B) 0.9744 C) 0.25 D) 0.8704
- 31) A fair die is rolled two times. What is the probability that both rolls are 1? 31) _____
 A) 0.167 B) 0.0046 C) 0.028 D) 0.083
- 32) According to popular belief, 80% of adults enjoy drinking beer. Choose a group of 4 32) _____
 adults at random. The probability that all of them enjoy drinking beer is:
 A) 0.200 B) 0.410 C) 0.250 D) 3.200

- 33) A coin is tossed 3 times. Find the probability that all 3 tosses are tails. 33) _____
- A) $\frac{1}{8}$ B) $\frac{1}{6}$ C) $\frac{1}{3}$ D) $\frac{1}{9}$
- 34) In the Happy Hilltop Health Home, 10% of the residents play shuffleboard, 35% of the residents play poker, and 15% of the residents garden. If 5% of the residents play poker and garden, find the probability that a resident plays poker, given that they also garden. 34) _____
- A) 14.3% B) 33.3% C) 5.9% D) 7.7%
- 35) When two events are independent, the probability of both occurring is: 35) _____
- A) $P(A \text{ and } B) = P(A) + P(B)$ B) $P(A \text{ and } B) = P(A) \cdot P(B)$
C) $P(A \text{ and } B) = 1 - (P(A) + P(B))$ D) $P(A \text{ and } B) = 1 - P(A) \cdot P(B)$

Answer Key
Testname: HW2

- 1) A
- 2) D
- 3) A
- 4) A
- 5) D
- 6) B
- 7) A
- 8) B
- 9) C
- 10) C
- 11) A
- 12) A
- 13) C
- 14) A
- 15) C
- 16) B
- 17) B
- 18) D
- 19) A
- 20) B
- 21) A
- 22) D
- 23) D
- 24) C
- 25) C
- 26) A
- 27) A, B
- 28) D
- 29) D
- 30) B
- 31) C
- 32) B
- 33) A
- 34) B
- 35) B