

Math 3201 Chapter 3 Probability Test

Name: _____

Section A: Multiple Choice- *Place the correct answer to each question on the answer sheet provided.*

1. Given the following probabilities, which event is most likely to occur?
 - A. $P(A) = 0.2$
 - B. $P(B) = \frac{1}{6}$
 - C. $P(C) = 0.3$
 - D. $P(D) = \frac{1}{3}$

2. Tia notices that yogurt is on sale at a local grocery store. The last eight times that yogurt was on sale, it was available only three times. Determine the odds against yogurt being available this time.
 - A. 3 : 5
 - B. 3 : 8
 - C. 5 : 8
 - D. 5 : 3

3. Select the events that are independent.
 - A. Choosing a number between 1 and 30 with the number being a multiple of 2 and also a multiple of 4.
 - B. Drawing a heart from a standard deck of 52 playing cards and then drawing another heart, without replacing the first card.
 - C. Rolling a 2 and having a sum greater than 4 with a pair of six-sided dice, numbered 1 to 6.
 - D. Rolling a 1 and rolling a 6 with a pair of six-sided dice, numbered 1 to 6.

4. There are 40 males and 60 females in a graduating class. Of these students, 10 males and 20 females plan to attend a certain university next year. Determine the probability that a randomly selected student plans to attend the university.
 - A. 0.3
 - B. 0.4
 - C. 0.5
 - D. 0.6

5. Anthony has three loonies, four toonies, and seven quarters in his pocket. He needs two toonies for a parking meter. He reaches into his pocket and pulls out two coins at random. Determine the probability that both coins are toonies.
- A. 2.1%
 - B. 6.6%
 - C. 9.2%
 - D. 12.7%
6. Which formula represents the favorable outcomes of two mutually exclusive events?
- A. $P(A \cup B) = P(A) + P(B) - P(A \cap B)$
 - B. $P(A \cap B) = P(A) \cdot P(B/A)$
 - C. $P(A \cup B) = P(A) + P(B)$
 - D. $P(A \cap B) = P(A) \cdot P(B)$
7. Select the independent events.
- A. $P(A) = 0.22$, $P(B) = 0.39$, and $P(A \cap B) = 0.072$
 - B. $P(A) = 0.18$, $P(B) = 0.7$, and $P(A \cap B) = 0.163$
 - C. $P(A) = 0.51$, $P(B) = 0.1$, and $P(A \cap B) = 0.069$
 - D. $P(A) = 0.9$, $P(B) = 0.23$, and $P(A \cap B) = 0.207$
8. A regular six sided die is spun, and a coin is flipped. What is the probability that the result would be an even numbers and heads?
- A. $1/12$
 - B. $1/2$
 - C. $1/4$
 - D. $1/3$

Section B: Questions- *Show all workings in the space provided to receive full marks.*

1. A hockey game has ended in a tie after a 5 min overtime period, so the winner will be decided by a shootout. The coach must decide whether Jules or Vicki should go first in the shootout. The coach would prefer to use her best scorer first, so she will base her decision on the players' shootout records.

Player	Attempts	Goals Scored
Jules	15	7
Vicki	19	12

A) Who should go first?

B) What are the odds in favor for Jules?

C) What are the odds against for Vicki?

2. A survey reported that 29% of households have one or more dogs, 35% have one or more cats, and 42% have neither dogs nor cats. Suppose that a household is selected at random. Determine the probability that there are cats but no dogs in the household.

5. Debra is the coach of a junior ultimate team. Based on the team's record, it has a 70% chance of winning on calm days and a 50% chance of winning on windy days. Tomorrow, there is a 30% chance of high winds. There are no ties in ultimate. What is the probability that Debra's team will win tomorrow?