

Quiz 5

Show all your work

Name: _____
 Number: _____
 Signature: _____
 Score: ____/17

Problem 1: Answer each question to two decimal place accuracy when appropriate. Write out steps for each.

- a. If there is a 1 in 200 chance that Janette will pick the numbers correctly in President's Barbecue lottery, what is the probability she will NOT pick the numbers correctly?

- b. The residents of Smithston and the surrounding areas are divided over the proposed construction of a dog park in town, as shown in the table. A reporter randomly selects a person to interview from a group of residents. If the person selected lives in the surrounding areas, what is the probability that the person supports the dog park?

| | Support dog park | Oppose dog park | |
|---------------------------|------------------|-----------------|--|
| Live in town | 7252 | 6316 | |
| Live in surrounding areas | 518 | 461 | |

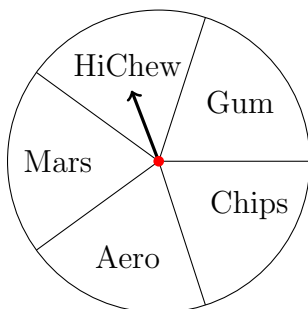
- c. When you flip three coins, what is the probability of getting at least one heads?

- d. When you draw a single card from a deck of 52 cards, what is the probability of getting a red queen?

- e. Assume that A and B are events. If $P(A \cap B) = 0.20$, $P(A) = 0.40$, and $P(B) = 0.65$, find $P(A \cup B)$.

Score: /5

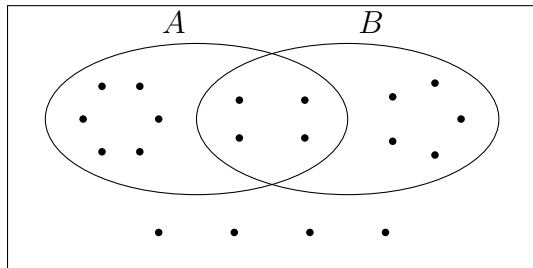
Problem 2: Dad constructed a spinner with five equal sectors the morning after Halloween for Hamlet and Samlet. Assume that the pointer never lies on a border line, answer the following questions.



- a. Find the probability for the event of getting no HiChew after two spins.
- b. Find the probability for the event of getting at least one Mars bar after three spins.

Score: /4

Problem 3: Dad drew a big rectangle representing a sample space containing two events, A and B . Assume that the outcomes (as dots) were all equally likely, answer the following questions.



a. $P(B)$

b. $P(A \cup B)$

c. $P(B | A)$

d. Are A and B mutually exclusive?

Score: /4

Problem 4: Hamlet woke up with a high fever and a bad cough. When Sam brought him to the doctor, a rapid antigen test from a throat swab sample was performed. From the table below, draw a probability tree with probabilities assigned on the branches to answer the probability of HAVING a strep throat given a negative test result.

Hint: Begin the probability tree with whether Hamlet had Strep or not before branching further for test results.

| | | Streptococcus | |
|---------|---|---------------|------------|
| | | Have Strep A | No Strep A |
| Test | + | 240 | 35 |
| Results | - | 40 | 4560 |

Score: /4