# Quiz 5

Show all your work

**Problem 1**: Answer each question to two decimal place accuracy when appropriate. If an exact answer is possible expressed as a fraction, you may leave your answer as a fraction.

a. Suppose the probability of rain tomorrow is $70\%$. What would be the probability of no rain tomorrow?

$$\boxed{30\%}$$

b. Dad constructed a spinner with five equal sectors, each labelled with a different snack: Aero, HiChew, Mars Bar, Chips, Twix. Assume that the pointer never lies on a border, what is the probability that Samlette does not get Aero after two spins?

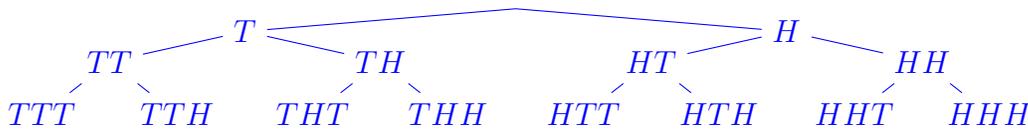$$\frac{4}{5} \times \frac{4}{5} = \boxed{\frac{16}{25}}$$

c. When Katharina rolls two cubic dice (D6), what is the probability of getting a total of less than 5?

$$\frac{6}{36} \text{ so } \boxed{\frac{1}{6}}$$

Score: /3

**Problem 2**: Hamlet and Samlette found three fair coins to flip. answer the following questions.

a. Draw a probability tree for flipping three coins.



b. Find the probability of getting at least two Heads from flipping three coins.

So $HHH, HHT, HTH$, or $THH$, so

$$\frac{4}{8} = \frac{1}{2}$$

Score: /3

**Problem 3**: Assume that $12\%$ of international visitors arriving at the Vancouver International Airport are sick with the latest variant of Covid. Suppose a Covid test correctly identifies a visitor sick with Covid $93\%$ of the time. Also assume that the test falsely identifies a healthy visitor as sick with Covid $5\%$ of the time. If an international visitor tests positive, what is the probability that the visitor is actually NOT sick with Covid?

Draw a probability tree as part of your steps.
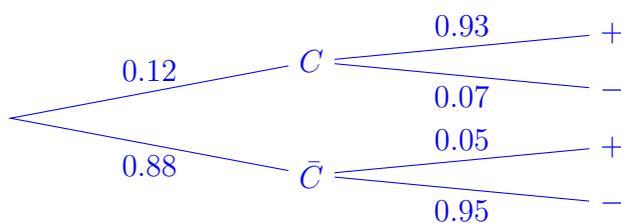


$$P(\bar{C} \mid +) = \frac{P(\bar{C} \cap +)}{P(+)} = \frac{0.88 \times 0.05}{0.12 \times 0.93 + 0.88 \times 0.05} \approx 7.39\%.$$

Score: /4