

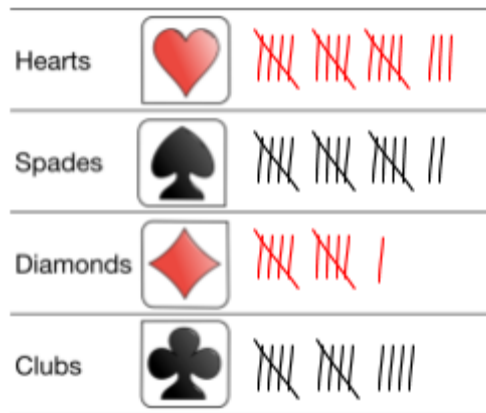


AFM Module Six Quiz One

Directions: There are 4 questions on this quiz, each with multiple parts. Show your work when directed and ask questions if you are not understanding.

- 1) Theoretical probability is what we expect to happen. Experimental probability is what does happen based on the results from a set number of trials.

Kurt uses a standard deck of 52 cards with 13 cards for each of the four suits (hearts, spades, diamonds, clubs). A card is selected at random. He records the suit of the card and replaces the card back in the deck. His results are shown below.



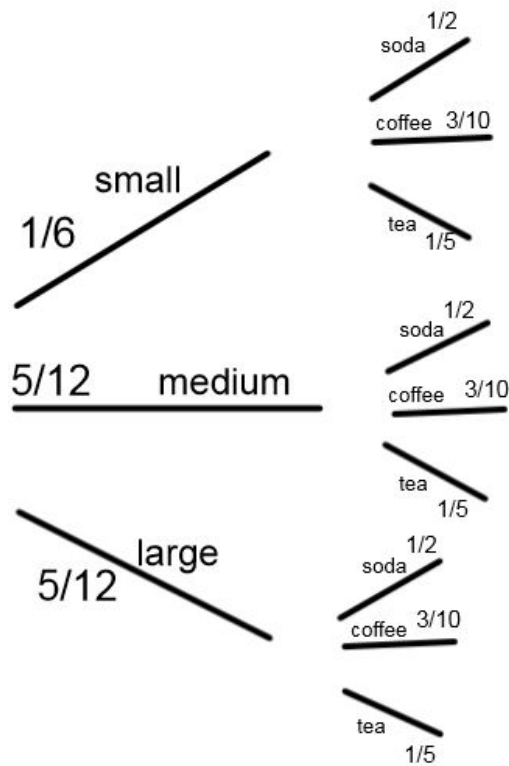
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- a) What is the theoretical probability of selecting a diamond?
Write your answer as a fraction in simplest terms.
- b) Based on his results, what is the experimental probability of selecting a diamond? Write your answer as a fraction in simplest terms.
- c) Based on his results, what is the experimental probability of selecting a spade? Write your answer as a fraction in simplest terms.



d) What should Kurt do to ensure the the experimental probability is closer to the theoretical probability?

2) At a fast food restaurant you can get three sizes of drinks (small, medium, large) and three different types of drinks (soda, tea and coffee). The probability that a customer chooses a small is $\frac{1}{6}$, a medium is $\frac{5}{12}$ and a large is $\frac{5}{12}$. The probability that a customer gets soda is $\frac{1}{2}$, tea is $\frac{3}{10}$ and coffee is $\frac{1}{5}$. This information is displayed on the following tree diagram.

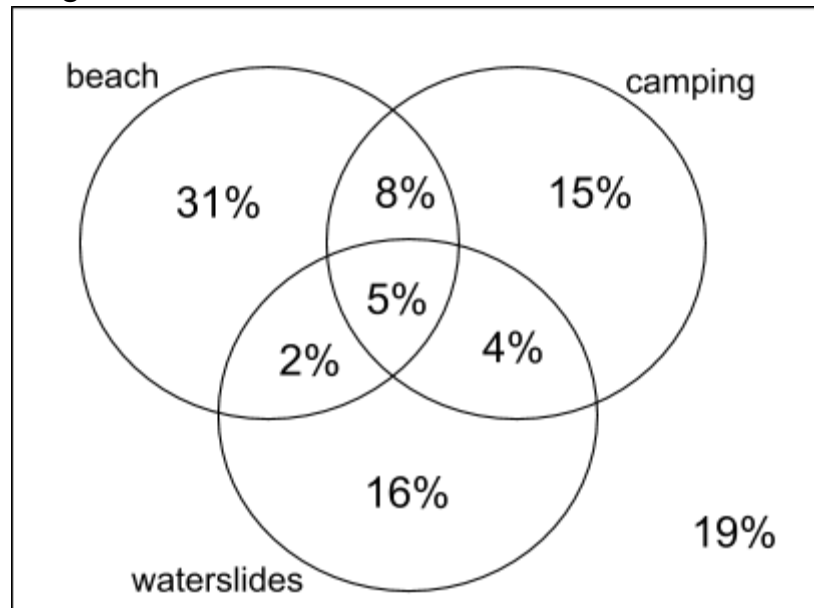


Using the information in the tree diagram, determine each of the following probabilities.

a) Find the probability that a customer get a small coffee. Show all work and write your answer as a reduced fraction.



- b) Find the probability that customer gets a medium or large soda. Show all work and write your answer as a reduced fraction.
- 3) A survey was done to see how many people visit the beach, go camping or go to the waterslides during the summer months. It was found that 32% went camping, 46% went to the beach and 27% went to the waterslides. 13% went camping & to the beach, 7% went to the beach & to the waterslides, 9% went camping & to the waterslides, and 5% went to all three. The data based on 100% is displayed in the Venn Diagram below.

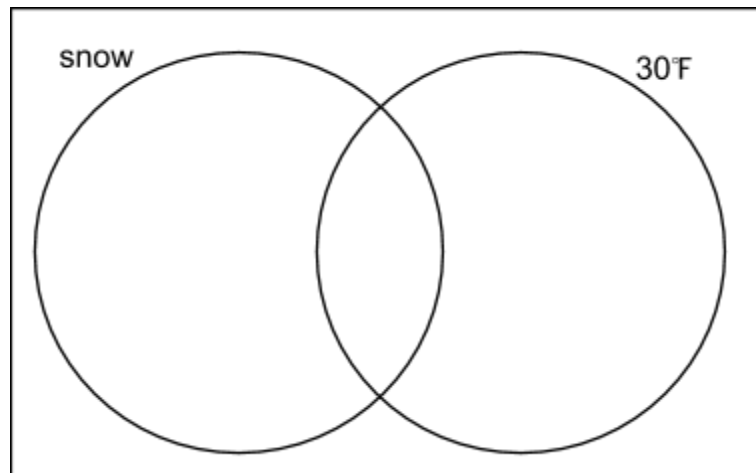


Use the diagram to answer the following questions.

- a) What is the percent of people that went to the beach and went to the waterslides? Show all work.
- b) What is the percent of people who went camping or to the beach? Show all work.



- c) What is the percent who went to only one of the three locations? Show all work.
- d) What is the percent who did none of these activities?
- 4) The probability it will snow on Monday is $\frac{5}{9}$. The probability that the temperature on Monday will reach 30°F is $\frac{1}{3}$. The probability that it will snow and reach 30°F on Monday is $\frac{7}{10}$.
- a) Fill in the Venn Diagram below to show the probability it will only snow, the probability it will only reach 30°F , and the probability it does both. Let x represents the probability it will snow on Monday **and** reach 30°F ,



- b) Find the probability it will snow and reach 30°F on Monday. Show all work. Write your answer as a reduced fraction.