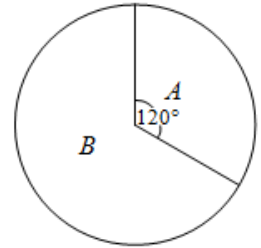


Chapter 4 Quiz - Trigonometry & Probability

1. The local Wizard of Geometry has challenged you to a “spinning duel.” He shows you the spinner at right and explains the game.

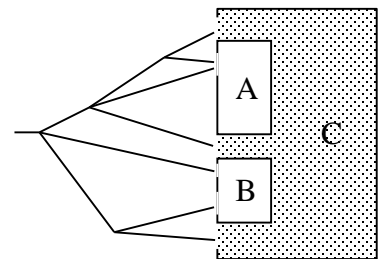


“Each player spins the spinner **twice** in his or her turn. If the letters match on those two spins, player one gets a point. If the letters are different, player two gets a point. First person to ten points wins.”

The Wizard is willing to bet a \$50 gift card each. You really want to win. The Wizard is even letting you choose to be player one or player two.

Which player should you choose to be? Why? Explain completely, **including the probabilities** of each outcome in your explanation by using an area model or a tree diagram (your choice).

2. Sammy the rat is trying to learn the new maze at right. If he randomly chooses a path each time the path forks, which room is Sammy most likely to walk into? Justify your answer by showing the probability that he ends up in each room (hint: use a tree diagram to help).



3. Rimshot McGee has an 89% free throw average. The opposing team is ahead by one point. Rimshot is at the foul line in a **one-and-one situation** with just seconds left in the game. (A one-and-one situation means that the player shoots a free throw. If they make the shot, they are allowed to shoot another. If they miss the first shot, they get no second shot. Each shot made is worth one point.)

Draw a tree diagram or an area model to represent this situation. What is the probability that Rimshot will make both shots and help his team win? Show all work!

4. What is the probability that a random card drawn from a standard deck (52 cards) is a queen or a club? Use proper probability notation.
5. What is the probability that a random card drawn from a standard deck (52 cards) is a 5 and a heart? Use proper probability notation.
6. What is the chance that rolling a six sided die (numbers 1-6) and randomly drawing a card from a standard deck (52 cards) match? (Use the Ace to match with the number 1 on the dice). Hint: make a list of matches, but be careful because this will not represent the entire sample space.

7. Prince Charming is 500 feet from the castle on his trusty horse. The Prince looks up to the Princess with a steady 15° angle as she waves in excitement. If the Prince's eye height is 8 ft above the ground, how high must the Prince climb if he is to reach the Princess at the top of the tower?

