

## Indicators

### Objective:

#### 4.02 Use a sample space to determine the probability of an event.

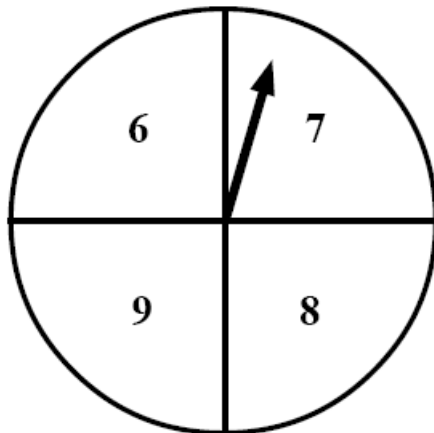
Vocabulary and Resources		
possible outcome	favorable outcome	geometric probability

**A.** T. K. Chance tossed four fair coins. List the ways he could get one head and three tails. What is the probability that he will get exactly three tails when he tosses four fair coins? Predict the number of times he would get exactly three tails when tossing four fair coins 500 times.

**B.** A fair coin is to be tossed three times. What is the probability that two heads and one tail in any order will result?  
(Adapted from SREB publication *Getting Students Ready for Algebra I: What Middle Grades Students Need to Know and Be Able to Do*)

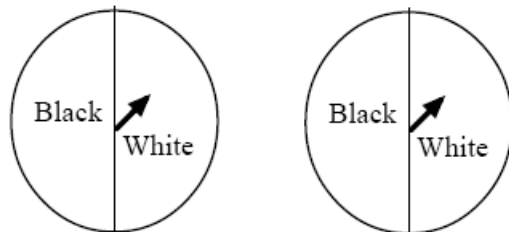
**C.** Blake is helping his younger brother Ben with his addition facts. Ben spins the fair spinner twice and determines the sum of the two numbers.

- What is the probability that the two numbers will produce the smallest possible sum? the largest possible sum?
- What is the probability that the sum will be greater than 13?
- What is the probability that the sum will be an even number?
- Is there one sum that is more likely to occur than any other sum? Explain.



**D.** Suppose you toss two fair number cubes with faces labeled zero to five and then determine the sum of the two numbers. What is the probability of obtaining a sum of seven?

**E.** The two fair spinners shown below are part of a carnival game. A player wins a prize only when both arrows land on black after each spinner has been spun once. James thinks he has a 50-50 chance of winning. Do you agree? Justify your answer.



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**F.** Rebecca is throwing darts at a square dart board that measures 3 feet on a side and has a blue circular region in the center with a diameter of 2 feet. What is the probability that the dart will land on the dart board in the blue region?