

1. Ten teachers met at a mathematics conference. Each teacher shook the hand of each of the other teachers exactly once. How many handshakes were there?
- A 100
B 55
C 45
D 11
2. Kevin and four friends want to play a game. Only three people may play at a time. How many different combinations of three players are possible?
- A 60
B 30
C 15
D 10

3. The basketball team needs to select uniforms. They have the following choices:

Shirts	Red, White, Black
Shorts	Red, White, Black
Shoes	High Tops, Medium Tops, Low Tops

How many uniform combinations are possible?

- A 3
- B 9
- C 27
- D 81
-
4. A fair coin is tossed 3 times. What is the probability that the coin will land showing heads on all three tosses?
- A $\frac{1}{9}$
- B $\frac{1}{8}$
- C $\frac{1}{6}$
- D $\frac{1}{3}$

5. Three fair coins are tossed at the same time. What is the probability that one of the coins will show heads and the other two will show tails?
- A $\frac{1}{8}$
- B $\frac{1}{3}$
- C $\frac{3}{8}$
- D $\frac{1}{2}$
-
6. Juan rolled two fair number cubes that have faces labeled 1 to 6 each. He rolled the two cubes 210 times. According to the theoretical probability, how many of the rolls should Juan expect the sum to be seven?
- A 21
- B 35
- C 45
- D 70

7. Students made a chart showing the colors and sizes of 62 birds they saw at a zoo.

Birds at a Zoo

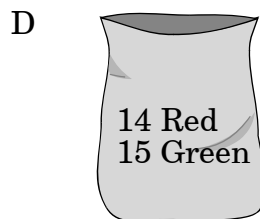
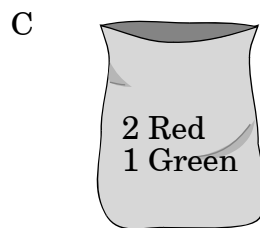
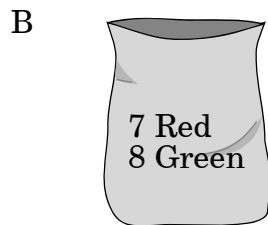
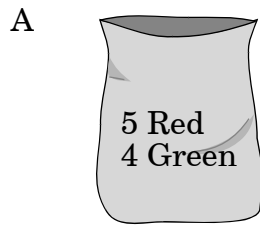
Main Color	Size		
	Small	Medium	Large
Blue		3	
Gray		8	4
White	7	2	4
Black	10	9	6
Red		3	2
Brown		1	3

What is the probability that a randomly selected bird at the zoo will be large and black?

- A $\frac{3}{31}$
- B $\frac{7}{31}$
- C $\frac{6}{19}$
- D $\frac{19}{62}$

8. Matt has a bag containing 12 green marbles and 8 blue marbles. Without looking, he pulls out one marble and places it on a table. He then picks a second marble from the bag. What is the probability he will have 2 blue marbles?
- A $\frac{8}{20} \cdot \frac{7}{19}$
- B $\frac{8}{20} \cdot \frac{7}{20}$
- C $\frac{1}{8} \cdot \frac{1}{7}$
- D $\frac{1}{8} \cdot \frac{1}{8}$
9. Quinn tosses a fair coin and then rolls a fair number cube with faces labeled 1 through 6. What is the probability that the result will be heads and a number less than 3?
- A $\frac{3}{12}$
- B $\frac{2}{12}$
- C $\frac{2}{16}$
- D $\frac{1}{12}$
10. Sam has three quarters, four dimes, two nickels, and one penny in his pocket. If he reaches into his pocket and randomly pulls out one coin, what is the probability that the coin will be a quarter?
- A $\frac{3}{4}$
- B $\frac{3}{7}$
- C $\frac{3}{10}$
- D $\frac{7}{10}$

11. The bags shown below contain red and green marbles. From which bag will a student have the greatest probability of randomly picking a red marble?



12. A box contains spools of thread. There are 5 red, 6 yellow, and 4 white spools of thread. John picks a spool and keeps it. His spool is not white. Then Sue picks a spool and keeps it. Her spool is not white. It is now Ted's turn to pick a spool from the box. What is the probability that Ted's spool will be white?

A $\frac{4}{13}$

B $\frac{4}{15}$

C $\frac{1}{13}$

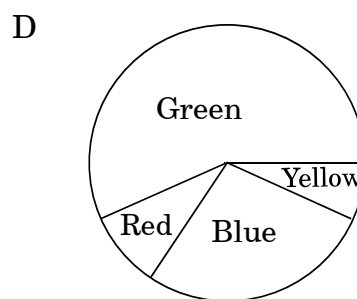
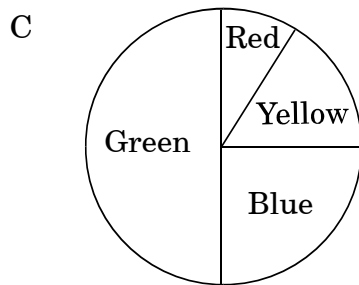
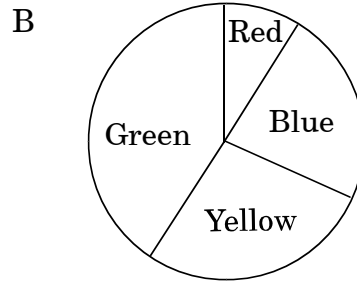
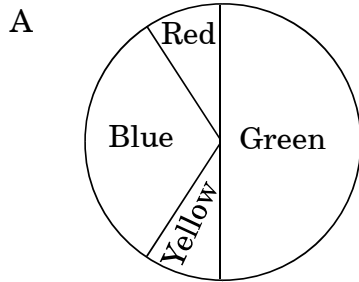
D $\frac{1}{15}$

13. Jeanette wants to determine the most popular car in her town. Which plan would give Jeanette the **most accurate** results?
- A Conduct a sample survey of the cars in her school's parking lot at 1:30 on a school day.
- B Conduct a random telephone survey of people who live in her state.
- C Conduct a sample survey of the cars that are advertised in the local newspaper.
- D Conduct a random survey of people entering a large grocery store in her town.

14. The students in Mr. Smith's class play a game using a fair spinner. After spinning, they record the following results:

Yellow	Green	Red	Blue
599	1803	270	928

Which spinner was Mr. Smith's class **probably** using?



End of Goal 4 Sample Items

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Answers to EOG Grade 6 Math Sample Items

Goal 4

1. Objective 4.01

Develop fluency with counting strategies to determine the sample space for an event. Include lists, tree diagrams, frequency distribution tables, permutations, combinations, and the Fundamental Counting Principle.

Thinking Skill: Analyzing **Correct Answer:** C

2. Objective 4.01

Develop fluency with counting strategies to determine the sample space for an event. Include lists, tree diagrams, frequency distribution tables, permutations, combinations, and the Fundamental Counting Principle.

Thinking Skill: Analyzing **Correct Answer:** D

3. Objective 4.01

Develop fluency with counting strategies to determine the sample space for an event. Include lists, tree diagrams, frequency distribution tables, permutations, combinations, and the Fundamental Counting Principle.

Thinking Skill: Applying **Correct Answer:** C

4. Objective 4.01

Develop fluency with counting strategies to determine the sample space for an event. Include lists, tree diagrams, frequency distribution tables, permutations, combinations, and the Fundamental Counting Principle.

Thinking Skill: Applying **Correct Answer:** B

5. Objective 4.02

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

Thinking Skill: Applying **Correct Answer:** C

6. Objective 4.02

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

Thinking Skill: Integrating **Correct Answer:** B

7. Objective 4.03

Conduct experiments involving simple and compound events.

Thinking Skill: Integrating **Correct Answer:** A

8. Objective 4.03

Conduct experiments involving simple and compound events.

Thinking Skill: Integrating **Correct Answer:** A

- 9. Objective 4.04**
Determine and compare experimental and theoretical probabilities for simple and compound events.
Thinking Skill: Applying **Correct Answer:** B
- 10. Objective 4.04**
Determine and compare experimental and theoretical probabilities for simple and compound events.
Thinking Skill: Applying **Correct Answer:** C
- 11. Objective 4.05**
Determine and compare experimental and theoretical probabilities for independent and dependent events.
Thinking Skill: Analyzing **Correct Answer:** C
- 12. Objective 4.05**
Determine and compare experimental and theoretical probabilities for independent and dependent events.
Thinking Skill: Analyzing **Correct Answer:** A
- 13. Objective 4.06**
Design and conduct experiments or surveys to solve problems; report and analyze results.
Thinking Skill: Evaluating **Correct Answer:** D
- 14. Objective 4.06**
Design and conduct experiments or surveys to solve problems; report and analyze results.
Thinking Skill: Analyzing **Correct Answer:** C