

Name: _____

2004, Mathematics - Grade 10
Question 12: Multiple Choice



Data Analysis, Statistics, and Probability

Shelley is registering at a hotel that has 14 rooms available on the first floor, 10 rooms available on the second floor, and 16 rooms available on the third floor. If Shelley is assigned one of these hotel rooms at random, what is the probability that it will be on the second floor?

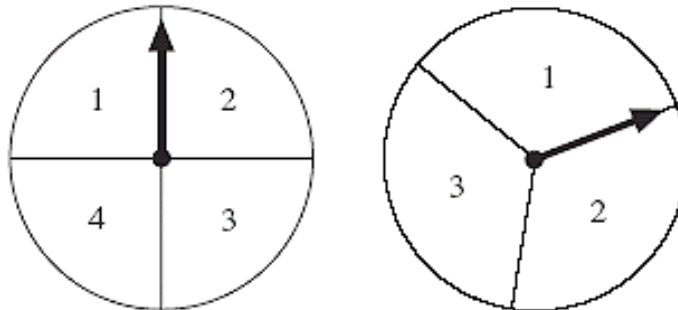
- A. $\frac{1}{4}$
- B. $\frac{3}{10}$
- C. $\frac{1}{3}$
- D. $\frac{2}{5}$

2003, Mathematics - Grade 10
Question 10: Multiple Choice



Data Analysis, Statistics, and Probability

Joshua spun the arrow on each spinner shown below exactly once. He recorded the sum of the resulting two numbers.



What is the probability that the sum of the resulting two numbers will be 2?

- A. $\frac{1}{12}$
- B. $\frac{1}{4}$
- C. $\frac{1}{3}$
- D. $\frac{7}{12}$

Name: _____

2002, Mathematics - Grade 10
Question 32: Multiple Choice



Data Analysis, Statistics, and Probability

In her closet, Megan has 6 different T-shirts, 5 different pairs of shorts, and 2 different hats. She pulls out 1 T-shirt, 1 pair of shorts, and 1 hat without looking. How many different combinations of 1 T-shirt, 1 pair of shorts, and 1 hat are possible?

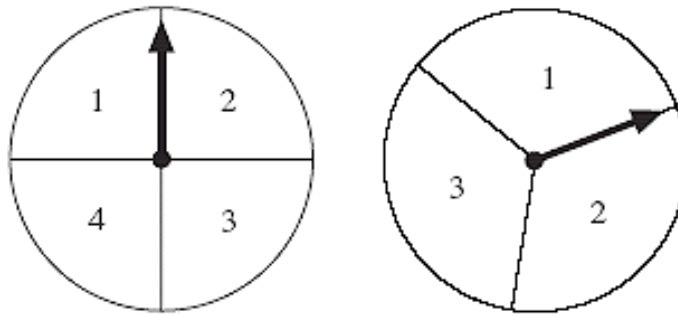
- A. 11
- B. 16
- C. 32
- D. 60

2003, Mathematics - Grade 10
Question 10: Multiple Choice



Data Analysis, Statistics, and Probability

Joshua spun the arrow on each spinner shown below exactly once. He recorded the sum of the resulting two numbers.



What is the probability that the sum of the resulting two numbers will be 2?

- A. $\frac{1}{12}$
- B. $\frac{1}{4}$
- C. $\frac{1}{3}$
- D. $\frac{7}{12}$

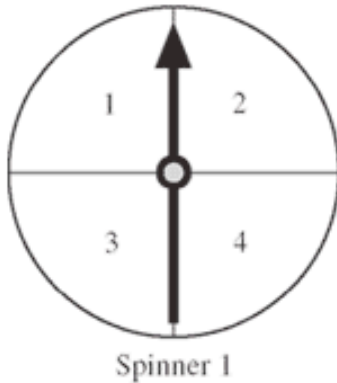
Name: _____

2002, Mathematics - Grade 10
Question 30: Multiple Choice



Data Analysis, Statistics, and Probability

Janet is playing a game using the two spinners shown below. She will spin the arrow on each spinner once and will move a specified number of steps forward or backward according to the results of the spins.



What is the probability that Janet will have to move backward **less than** 4 steps?

- A. $\frac{1}{8}$
- B. $\frac{3}{8}$
- C. $\frac{1}{2}$
- D. $\frac{3}{4}$

2002, Mathematics - Grade 10
Question 17: Open Response



Data Analysis, Statistics, and Probability

Casey placed six identical cards in a box. Each card was marked with one integer using each of the integers 0, 1, 2, 3, 4, and 5 once. Casey drew two cards at random, one at a time, without replacing the first card.

- a. Make a list, chart, or diagram of the possible outcomes when choosing two cards in this manner.
- b. What is the probability that the sum of the integers on the two cards is greater than 9?
- c. Based on your response to part a., what is the most frequently occurring sum of the integers? What is the probability that this sum will occur?

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2001, Mathematics - Grade 10
Question 37: Multiple Choice

Data Analysis, Statistics, and Probability



Joseph has two number cubes, each with faces labeled by the numbers -15, -10, -5, 5, 10, and 15.



If Joseph rolls the two cubes and adds the resulting numbers, what is the probability that the sum will be 0?

- A. $\frac{1}{36}$
- B. $\frac{1}{12}$
- C. $\frac{1}{4}$
- D. $\frac{1}{6}$

2001, Mathematics - Grade 10
Question 26: Multiple Choice

Data Analysis, Statistics, and Probability



A set of 36 cards is numbered with the positive integers from 1 to 36. If the cards are shuffled and one is chosen at random, what is the probability that the number on the card is a multiple of **both 4 and 6**?

- A. $\frac{1}{12}$
- B. $\frac{1}{6}$
- C. $\frac{5}{12}$
- D. $\frac{2}{3}$

Name: _____

2002, Mathematics - Grade 10
Question 6: Multiple Choice

Data Analysis, Statistics, and Probability



Lani had a box that contained

- 1 blue marble;
- 1 green marble;
- 1 purple marble;
- 1 yellow marble; and
- 2 red marbles.

Lani removed one marble without looking, and she recorded the result. She placed the marble back in the box and repeated the procedure one more time. What is the probability that Lani removed a red marble followed by a blue marble?

A. $\frac{1}{36}$

B. $\frac{1}{18}$

C. $\frac{1}{3}$

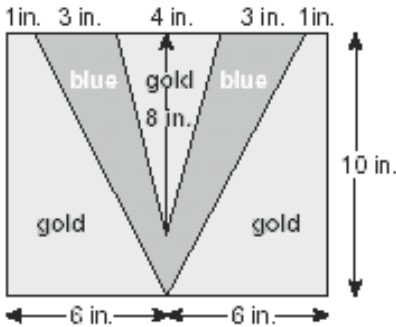
D. $\frac{1}{2}$

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2001, Mathematics - Grade 10
Question 22: Open Response

Measurement

Use the graphic below to answer question 22.



Students at Viking High School decide to have T-shirts made with a blue "V" inside a gold rectangle as shown in the diagram above.

The costs are as follows:

- plain T-shirt \$8.50
- blue coloring \$0.02 per square inch
- gold coloring \$0.04 per square inch

- a. What is the area of the blue "V" in the diagram above? Show your work.
- b. Explain how you can determine the area that will be colored gold.
- c. What will be the total cost for each T-shirt shown above? Show your work.

Name: _____

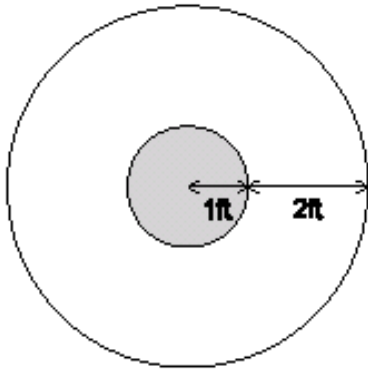
2001, Mathematics - Grade 10

Question 9: Multiple Choice

Data Analysis, Statistics, and Probability



Julie designed a target computer game. On her computer screen, the circular targets look like the circular areas shown below.



If the computer randomly generates a dot that lands within the circular areas, what is the approximate probability that the dot will land in the shaded area?

- A. $\frac{1}{9}$
- B. $\frac{2}{9}$
- C. $\frac{1}{3}$
- D. $\frac{2}{3}$

2000, Mathematics - Grade 10

Question 38: Multiple Choice

Patterns, Relations, and Algebra



Six candidates are running for two open school board seats. How many different pairs of candidates can be elected?

- A. 15
- B. 12
- C. 11
- D. 30

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2000, Mathematics - Grade 10

Question 19: Multiple Choice

Patterns, Relations, and Algebra

Use the picture of the cards to answer question 19.



Each of the letters **M**, **A**, **T**, and **H** appear on the reverse side of one of the four cards above (one letter per card), but not necessarily in that order. If the cards are turned over, what is the probability that they will be ordered so that they spell the word **MATH**?

- A. $\frac{1}{4}$
- B. $\frac{1}{12}$
- C. $\frac{1}{24}$
- D. $\frac{1}{48}$

1999, Mathematics - Grade 10

Question 34: Multiple Choice

Patterns, Relations, and Algebra

Use the table to answer question 34.

The number of calculators sold in the school bookstore for the month of September is shown [in the table]. Based on the data shown, what is the probability that the next calculator sold will be a graphing calculator?

Calculators Sold in September	
Calculator Type	Number Sold
graphing	15
scientific	28
four function	25
other	12

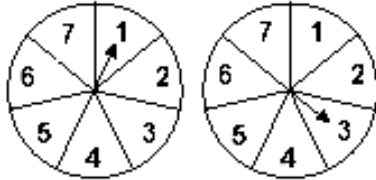
- A. about 15%
- B. about 19%
- C. about 23%
- D. about 25%

Name: _____

2000, Mathematics - Grade 10
Question 5: Multiple Choice

Patterns, Relations, and Algebra

Use the spinners to answer question 5.



When playing a board game, you spin two spinners with congruent sectors numbered 1 through 7 as shown. If the **sum** of the two numbers you spin is 12, 13, or 14, you win.

What is the probability of winning?

- A. $\frac{21}{49}$
- B. $\frac{10}{49}$
- C. $\frac{15}{49}$
- D. $\frac{6}{49}$

Name: _____

1999, Mathematics - Grade 10

Question 8: Multiple Choice

Patterns, Relations, and Algebra

The senior class at West High School is about to hold elections for class officers. The list of candidates is shown in the following table.

President	Vice President	Secretary	Treasurer
Leah	Gloria	Andrea	Lance
Mike	Jason	Francis	Sonia
Minh		José	Yosef

How many different slates of officers could be made from the above list if a slate consists of **one** candidate for **each** office?

- A. 4
- B. 11
- C. 18
- D. 54

1999, Mathematics - Grade 10

Question 13: Open Response

Patterns, Relations, and Algebra

When playing the game "one-point no-point," each player rolls one red number cube and one white number cube. Each cube is numbered 1-6.

To win one point **all** of the following must be true:

- the number on the white cube is greater than 1,
 - the number on the red cube is greater than or equal to 2,
 - the number on the red cube is less than or equal to 5, and
 - the sum of the numbers on the two cubes is less than or equal to 7.
- a. Make a list, graph, or table showing all possible outcomes (sample space) of rolling the red number cube and the white number cube.
 - b. What is the probability of winning one point on a roll of the two cubes?
 - c. How could you change the last rule to make the probability of winning one point greater than $\frac{1}{2}$?

Name: _____

1998, Mathematics - Grade 10

Question 13: Multiple Choice

Data Analysis, Statistics, and Probability



One man and two women are seated randomly in a row. What is the mathematical probability that the two women are seated together?



Seat 1



Seat 2



Seat 3

- A. $\frac{1}{3}$
 - B. $\frac{1}{2}$
 - C. $\frac{2}{3}$
 - D. $\frac{5}{6}$
-

1998, Mathematics - Grade 10

Question 8: Multiple Choice

Data Analysis, Statistics, and Probability



Six students are participating in a fitness program. They are required to work out in pairs. How many **different** combinations of pairs of students are possible?

- A. 3
- B. 5
- C. 15
- D. 30

Name: _____

1998, Mathematics - Grade 10
Question 23: Multiple Choice



Data Analysis, Statistics, and Probability

60% of the cars owned by Best Car Rental are white and 30% have a standard transmission. If you randomly choose a rental car, what is the probability that you will get a white car **with** a standard transmission?

- A. $\frac{9}{10}$
- B. $\frac{9}{100}$
- C. $\frac{18}{100}$
- D. $\frac{90}{100}$