

**CHAPTER** **Free Response**  
**8** **Test A**

1. A bag contains 5 blue marbles and 5 green marbles. Is the likelihood of choosing a blue marble impossible, likely, unlikely, or equally likely?

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2. Joseph places three cards that are labeled 1 to 3 face down on the table and mixes them up. Is the likelihood that his friend Drew will draw an even-numbered card impossible, likely, unlikely, or equally likely?

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3. On the last spelling test, 4 students got an A, 6 got a B, 7 got a C, 5 got a D, and 3 got an F. Expressed as a percent, what is the probability that a student chosen at random might get an A on the next spelling test?

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4. A survey of your friends shows that 10 own a dog, 14 own a cat, and 6 have no pet. Find the experimental probability that the next person you survey will own a cat.

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5. During a tennis lesson, Karen hits 9 out of 10 serves in the service box. What is the experimental probability that she will hit her next serve in the service box? Write your answer as a ratio, as a decimal, and as a percent.

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6. Brian rolls a number cube and spins a spinner with two equal sections. How many outcomes are possible?

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7. Denise's sandwich shop offers a lunch special on sandwiches on white, oatmeal, and rye breads. You can also choose between turkey, egg salad, and chicken. How many different sandwiches can you choose for the lunch special?

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8. Two number cubes are rolled and the results are added. What is the probability that the sum is equal to 12?

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9. Yvonne spins a spinner that is split into 6 equal sections. The sections are labeled 3, 1, 2, 3, 2, 3. What is the probability that the spinner will land on the number 1?

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**CHAPTER**

**8**

**Free Response**

**Test A, continued**

10. A bag contains 3 red marbles and 1 yellow marble. What is the probability of drawing a red marble, then replacing that marble, then drawing a red marble again on the second pick?

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11. Suppose you roll a number cube and spin a spinner divided into equal sections shaded purple, yellow, and green. What is the probability that you will roll 2 *and* spin yellow?

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12. Charlene rolls a number cube and then chooses a card from a set of cards numbered 1 through 3. What is the probability that she will roll an even number *and* choose an odd-numbered card?

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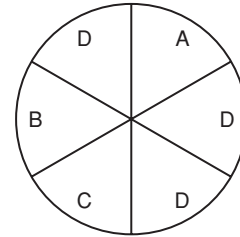
13. What is the probability of a spinner landing on green or yellow on a wheel that has three equal sections shaded green, red, and yellow?

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14. A bag contains 4 black marbles, 5 red marbles, and 1 blue marble. What is the probability of drawing a black marble or a red marble from the bag?

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15. What is the probability of this spinner landing on A?



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16. What is the probability of rolling a number greater than 6 on a number cube?

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17. If the probability of clouds on any given day is 50%, in a 30-day month, how many days would you predict will have clouds?

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18. About 5% of the items produced by a company are defective. Out of 1,000 items, how many would you predict will be defective?

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CHAPTER

8

# Free Response

## Test B

1. A bag contains 5 blue marbles and 15 green marbles. Is the chance of choosing a blue marble certain, likely, equally likely, unlikely, or impossible?  
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2. Ralph places five cards that are labeled 1 to 5 face down on the table and mixes them up. Is the chance that his friend Logan will draw an odd-numbered card certain, likely, equally likely, unlikely, or impossible?  
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3. On the last spelling test, 4 students got an A, 6 got a B, 7 got a C, 5 got a D, and 3 got an F. What is the probability that a student who takes the next spelling test will get a B?  
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4. A survey of your friends finds that 11 own a dog, 12 own a cat, and 7 have no pet. Find the experimental probability that the next person you ask will be a cat-owner.  
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5. During a tennis lesson, Melanie hits 8 out of 10 serves in the service box. What is the experimental probability that she will hit her next serve in the service box? Write your answer as a ratio, as a decimal, and as a percent.  
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6. Helena rolls a number cube and spins a spinner with five equal sections. How many outcomes are possible?  
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7. Rick's Deli offers a lunch special on sandwiches on white, rye, pumpernickel, or whole wheat bread. You can also choose between roasted vegetables and chicken. How many different sandwiches can you order for the lunch special?  
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8. Three number cubes are rolled and the results are added. What is the probability that the sum is equal to 3?  
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9. Louis spins a spinner that is split into 9 equal sections. The sections are labeled 1, 2, 3, 4, 5, 4, 3, 2, 1. What is the probability that the spinner will land on the number 4?  
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10. A bag contains 4 blue marbles and 2 yellow marbles. What is the probability of drawing a blue marble, replacing it, and then drawing a blue marble again?  
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**CHAPTER**

**8**

**Free Response**

**Test B, continued**

11. If you roll a number cube and then draw a card from a normal deck of playing cards, what is the probability of rolling a 5 and drawing a red card?

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12. Laurie rolls a number cube and then chooses a card from a set of cards numbered 1 through 8. What is the probability that she will roll an odd number and choose an even-numbered card?

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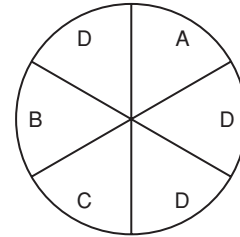
13. What is the probability of a spinner landing on green or yellow on a wheel that has four equal sectors shaded green, red, blue, and yellow?

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14. A bag contains 4 black marbles, 5 red marbles, and 1 blue marble. What is the probability of drawing a red marble or a blue marble from the bag?

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15. What is the probability of this spinner landing on D?



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16. What is the probability of rolling a number less than 5 on a number cube?

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17. If the probability of snow on any given day is 10%, in a 30-day month, how many days would you predict will have snow?

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18. About 4% of the items produced by a company are defective. Out of 8,000 items, how many would you predict will be defective?

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CHAPTER

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# Free Response

## Test C

1. A bag contains 9 blue marbles and 12 green marbles. Is the likelihood of choosing a blue marble impossible, likely, unlikely, or equally likely?  
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2. Elaine places fourteen cards that are labeled 1 to 14 face down on the table and mixes them up. Is the likelihood that her friend Ken will draw an odd-numbered card impossible, likely, unlikely, or equally likely?  
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3. On the last spelling test, 4 students got an A, 6 got a B, 7 got a C, 5 got a D, and 3 got an F. Expressed as a percent, what is the probability that a student chosen at random might get a C on the next spelling test?  
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4. A survey of your friends finds that 12 own a dog, 15 own a cat, and 8 have no pet. Find the experimental probability that the next person you survey will own a cat.  
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5. During a tennis lesson, Winnie hits 12 out of 20 serves in the service box. What is the experimental probability that she will hit her next serve in the service box? Write your answer as a ratio, as a decimal, and as a percent.  
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6. Barbara rolls a number cube and spins a spinner with nine equal sections. How many outcomes are possible?  
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7. Fred's sandwich shop offers a lunch special on sandwiches on white, pumpernickel, oatmeal, and rye breads. You can also choose cheese & tomato, meatloaf, turkey, egg salad, tuna salad, and chicken. How many different sandwiches can you make for the lunch special?  
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8. Two number cubes are rolled and the results are added. What is the probability that the sum is equal to 6?  
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**CHAPTER**

**8**

**Free Response**

**Test C, continued**

9. Zoe spins a spinner that is split into 11 equal sections. The sections are labeled 5, 4, 3, 1, 2, 1, 3, 4, 5, 1, 2. What is the probability that the spinner will land on the number 1?

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10. A bag contains 6 red marbles and 4 yellow marbles. What is the probability of drawing a red marble, then replacing that marble, then drawing a red marble again on the second pick?

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11. Suppose you roll a number cube and spin a spinner divided into equal sections shaded purple, yellow, and green. What is the probability that you will roll an odd number *and* spin yellow?

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12. Charlene rolls a number cube and then chooses a card from a set of cards numbered 1 through 24. What is the probability that she will roll an even number *and* choose an odd-numbered card?

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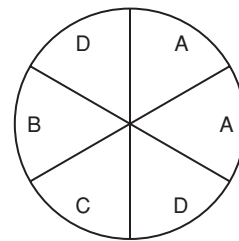
13. What is the probability of a spinner landing on green or yellow on a wheel that has five equal sections shaded green, red, green, blue, and yellow?

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14. A bag contains 4 black marbles, 5 red marbles, and 1 blue marble. What is the probability of drawing a black marble or a blue marble from the bag?

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15. What is the probability of this spinner landing on A?



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16. What is the probability of rolling a number less than 6 on a number cube?

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17. If the probability of hail on any given day is 3%, in a 30-day month, how many days would you predict will have hail?

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18. About 0.5% of the items produced by a company are defective. Out of 1,200 items, how many would you predict will be defective?

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