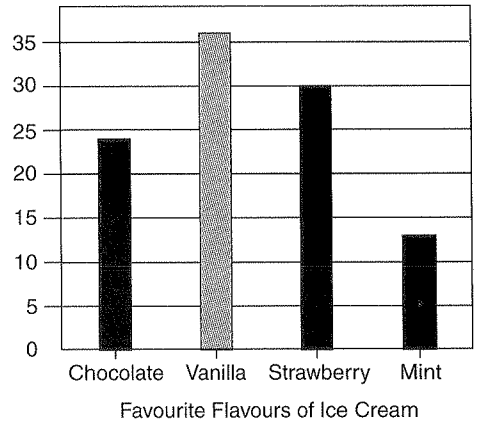
NAME _____

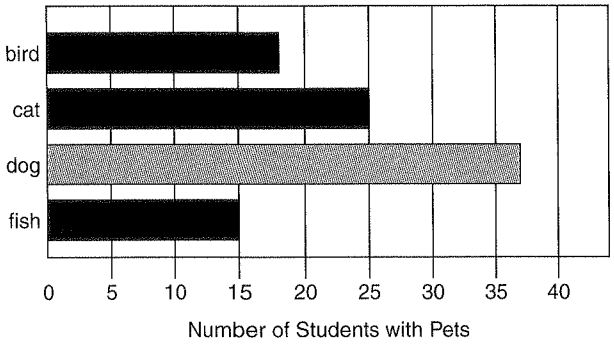
# Lesson 1 Bar Graphs

A **bar graph** compares information. The information is shown on the graph by bars.




This graph compares favourite flavours of ice cream.

The bar for vanilla is the longest, so most people chose vanilla as their favourite flavour.

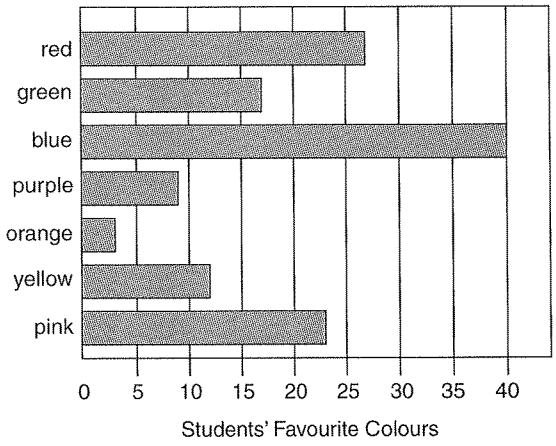



This graph compares what pets students have at home.

The bar for dogs is the longest. 37 students have pet dogs.

Read each graph and answer the questions.

**1.**



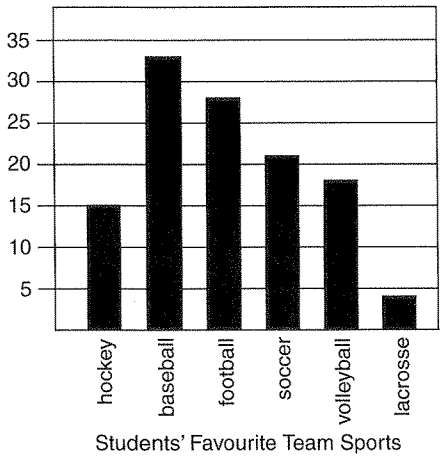

What is the favourite colour shown by the graph?

_____ is the favourite colour.

Which colour is the favourite colour of nine students?

_____ is the favourite colour of nine students.

**2.**




What is the favourite sport shown by the graph?

_____ is the favourite sport.

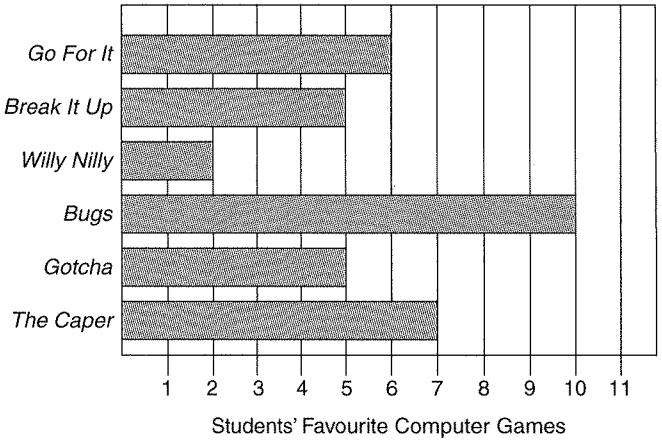
What is the least favourite sport?

_____ is the least favourite sport.

CHAPTER 16

# Lesson 1 Problem Solving

Use the bar graph to answer each question.




**1.** What is the favourite computer game shown by the bar graph?

_____ is the favourite computer game.

**2.** How many students like the game *Go For It?*

_____ students like *Go For It.*

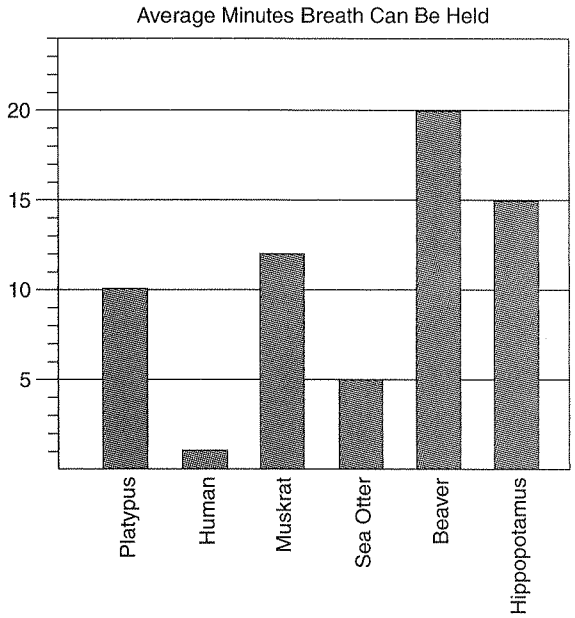
**3.** How many students like the game *Willy Nilly?*

_____ students like *Willy Nilly.*

**4.** How many more students like *The Caper* than *Willy Nilly?*

_____ more students like *The Caper.*

Use the bar graph to answer each question.




**5.** What creature can hold its breath the longest?

A _____ can hold its breath the longest.

**6.** How long can the average platypus hold its breath?

A platypus can hold its breath _____ min.

**7.** Which creature can hold its breath longer, a platypus or a muskrat?

A _____ can hold its breath longer.

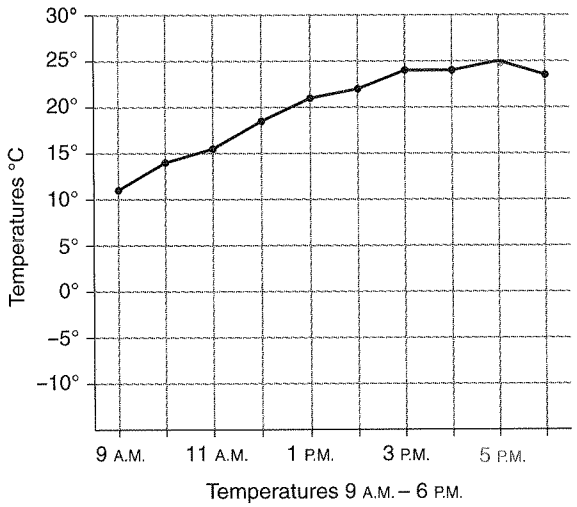
**8.** How much longer can a hippopotamus hold its breath than a sea otter?

A hippopotamus can hold its breath _____ min more than a sea otter.

NAME _____

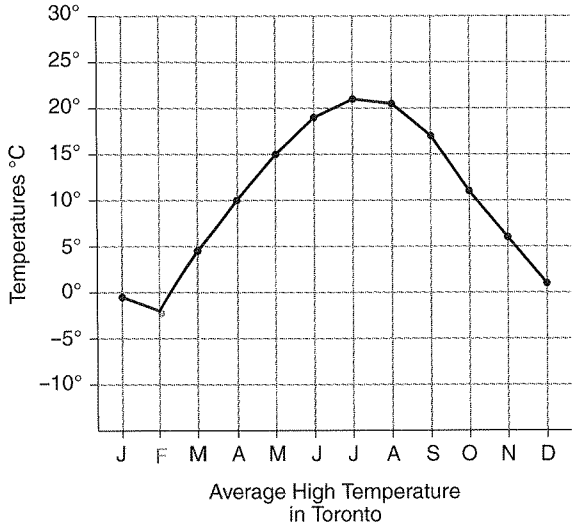
# Lesson 2 Line Graphs

A **line graph** shows how something changes over time. The information is shown on the graph by a line that connects points on the graph.




This graph shows how the temperature changed during one day.

The point for 25°C is the highest point, so was at the highest temperature for the day was at 5 P.M.



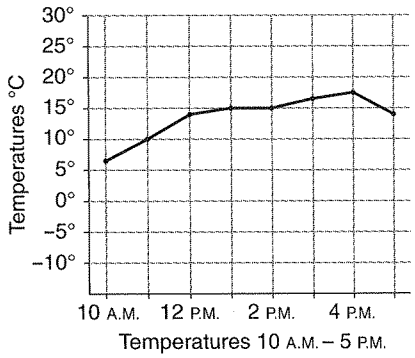

This graph shows the average temperature in Toronto for one year.

The point for February is the lowest, so that was the coldest month.

---

Study each graph and answer the questions.

**1.**



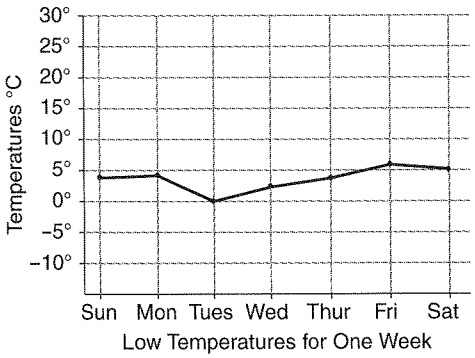

What is the highest temperature shown by the graph?

_____ is the highest temperature.

At what time was the temperature 17°C?

_____

**2.**




What is the lowest temperature shown by the graph?

_____ is the lowest temperature.

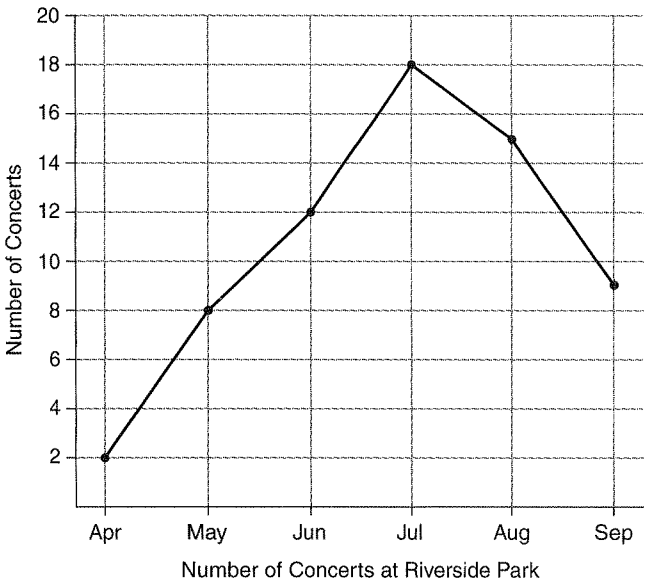
What day had the highest temperature?

_____ had the highest temperature.

CHAPTER 16

## Lesson 2 Problem Solving

Use the line graph to answer each question.




**1.** In which month were the most concerts held at Riverside Park?

The most concerts were held in _____.

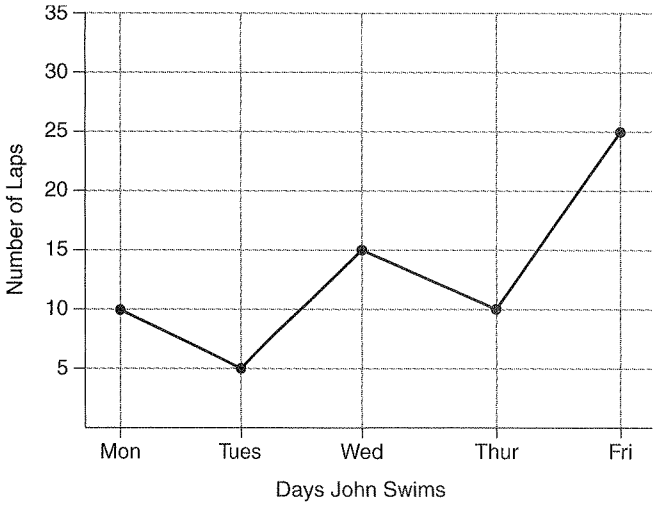
**2.** How many concerts were held in August?

There were _____ concerts held in August.

**3.** How many more concerts were held in July than in April?

There were _____ more concerts in July.

Use the line graph to answer each question.




**4.** On which day did John swim the most laps?

He swam the most laps on _____.

**5.** How many laps did John swim on Tuesday?

He swam _____ laps on Tuesday.

**6.** On which day did John swim the fewest laps?

He swam the fewest laps on _____.

**7.** How many more laps did John swim on Wednesday than he swam on Monday?

He swam _____ more laps on Wednesday.

NAME _____

# Lesson 3 Mean

The **mean** of a set of numbers is the sum of the numbers divided by the number of addends.

Find the mean of this set of numbers: 6, 7, 12, 16, 24.

$$\begin{array}{r} 6 \\ 7 \\ 12 \\ 16 \\ +24 \\ \hline 65 \end{array}$$

There are five addends.
Divide by 5.

$$5\overline{)65}\quad 13$$

The mean of this set of numbers is _____.

---

Find the mean of each set of numbers.

| | *a* | *b* |
|---|---|---|
| **1.** | 5, 14, 17, 18, 21 | 25, 26, 27, 28, 29 |
| | The mean is _____. | The mean is _____. |
| **2.** | 15, 18, 19, 25, 28, 33 | 23, 29, 36, 38, 41, 43 |
| | The mean is _____. | The mean is _____. |
| **3.** | 10, 12, 14, 16, 18, 20, 22 | 20, 25, 30, 35, 40, 45, 50 |
| | The mean is _____. | The mean is _____. |
| **4.** | 2, 3, 5, 8, 9, 11, 12, 14 | 9, 13, 16, 17, 23, 25, 26, 31 |
| | The mean is _____. | The mean is _____. |
| **5.** | 2, 3, 5, 5, 7, 8, 9, 9, 15 | 3, 3, 5, 5, 8, 9, 11, 13, 15 |
| | The mean is _____. | The mean is _____. |
| **6.** | 104, 105, 112, 113, 116 | 132, 144, 145, 147, 150, 152 |
| | The mean is _____. | The mean is _____. |
| **7.** | 204, 237, 244, 259 | 21, 24, 25, 27, 32, 38, 39, 42 |
| | The mean is _____. | The mean is _____. |

## Lesson 3 Problem Solving

Answer each question.

**1.** Marcia received marks of 98, 88, 95, and 83 on her math tests. What is Marcia's mean score?

The mean score is _____.

**1.**

**2.** The following times were turned in at the obstacle course: 45 min, 52 min, 57 min, 49 min, 41 min, and 56 min. What is the mean time for running the obstacle course?

The mean time is _____ minutes.

**2.**

**3.** Sheldon counted the number of fish in each tank at the pet store. He counted 32, 16, 44, 27, and 46 fish. What is the mean number of fish?

The mean number of fish is _____.

**3.**

**4.** The chart shows the temperature at several times during the day. What was the mean temperature for the day?

| | | | |
|---|---|---|---|
| 8 A.M. | 13°C | 12 P.M. | 24°C |
| 9 A.M. | 14°C | 1 P.M. | 24°C |
| 10 A.M. | 16°C | 2 P.M. | 25°C |
| 11 A.M. | 17°C | 3 P.M. | 22°C |

The mean temperature was _____°C.

**4.**

**5.** Jamal scored 21, 35, 10, 17 and 22 points in his last five basketball games. What is the mean number of points scored in his last five games?

The mean number of points is _____.

**5.**

NAME _____

# Lesson 4 Median, Mode, and Range

The **median** of a set of numbers is the middle number when the numbers are ordered from least to greatest.

5, 2, 8, 6, 4, 9, 2

2, 2, 4, 5, 6, 8, 9

The median is 5.

The **mode** of a set of numbers is the number that occurs most often.

5, 2, 8, 6, 4, 9, 2

2, 2, 4, 5, 6, 8, 9

The mode is 2.

The **range** of a set of numbers is the difference between the greatest number and the least number.

5, 2, 8, 6, 4, 9, 2

The greatest number is 9.
The least number is 2.

$9 - 2 = 7$

The range is 7.

---

Find the median, mode, and range for each set of numbers.

*a* *b* *c*

**1.** 6, 2, 8, 9, 1, 3, 2

The median is _____. The mode is _____. The range is _____.

**2.** 5, 9, 3, 1, 8, 5, 7, 4, 12

The median is _____. The mode is _____. The range is _____.

**3.** 7, 3, 2, 9, 5, 6, 3, 1, 3, 7, 5

The median is _____. The mode is _____. The range is _____.

**4.** 3, 7, 5, 1, 7, 4, 6, 3, 8, 14, 23, 1, 7, 8, 7

The median is _____. The mode is _____. The range is _____.

**5.** 11, 6, 5, 2, 6, 13, 7, 6, 19, 8, 14, 6, 2, 4, 10

The median is _____. The mode is _____. The range is _____.

## Lesson 4 Problem Solving

Solve each problem.

**1.** The following scores were turned in by the Lions baseball team: 11, 9, 3, 0, 6, 7, 4, 9, and 5. What is the median number of runs the team scored?

The median number of runs scored is _____.

**1.**

**2.** The following scores were turned in by the Panthers football team: 35, 7, 6, 21, 28, 14, 17, 28, and 9. What is the range of the team's scores?

The range of the scores is_____.

**2.**

**3.** Dr. Berry noticed the following masses of rabbits that were brought to her office: 4 kg, 3 kg, 6 kg, 3 kg, 3 kg, 5 kg, 4 kg, 4 kg, 7 kg, and 4 kg. What is the mode of the masses?

The mode of the masses is _____ kg.

**3.**

**4.** The Video Shack rented the following numbers of videos last week: Mon., 352; Tues., 244; Wed., 198; Thurs., 141; Fri., 378; Sat., 831; Sun., 211. What is the median number of movies rented?

The median number of videos rented is _____.

**4.**

**5.** A survey found students watched the following numbers of hours of TV per week: 24, 12, 35, 28, 7, 21, 24, 31, 20, 19, and 15. What is the range of hours?

The range of hours is _____.

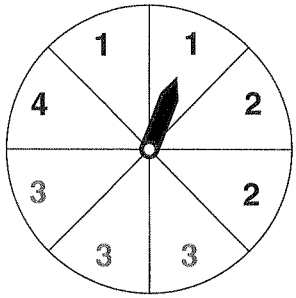
**5.**

NAME _____

# Lesson 5 Probability

Use a fraction to describe the **probability** of something happening.

What is the probability of spinning a 3 on this spinner?




There are eight possible outcomes of a spin:
1, 1, 2, 2, 3, 3, 3, and 4.
Use the number of **outcomes** as the denominator of the fraction.

$$\frac{?}{8}$$

There are three ways to spin a 3. Use this number as the numerator of the fraction.

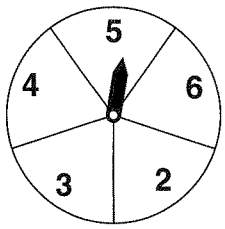
$$\frac{3}{8}$$

The probability of spinning a 3 is $\frac{3}{8}$.

---

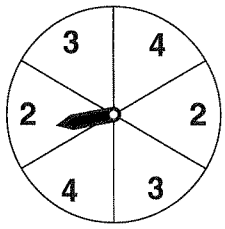
Find each probability.

**1.** What is the probability of spinning a 6 on this spinner?



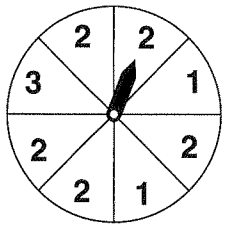

The probability of spinning a 6 is _____.

**2.** What is the probability of spinning a 4 on this spinner?




The probability is _____.

**3.** What is the probability of spinning a 2 on this spinner?




The probability is _____.

**4.** What is the probability of tossing a head on this coin?


The probability is _____.

CHAPTER 16

## Lesson 5 Problem Solving

Find each answer.

**1.** Paul has five black socks and seven white socks in a drawer. If he reaches in and takes one sock without looking, what is the probability he will get a white sock?

The probability of getting a white sock is _____.

**1.**

**2.** Cayce planted four red roses, eight yellow roses, and six pink roses. What is the probability that a red rose will be the first to bloom?

The probability that a red rose blooms first is _____.

**2.**

**3.** Darnell has six books about cars and eight books about spiders. If he takes one book off the shelf without looking, what is the probability he will get a book about spiders?

The probability he will pick a book about spiders is _____.

**3.**

**4.** Ali collects rocks. His collection has 15 samples of quartz, seven samples of mica, and 12 samples of pyrite. If his cat knocks one rock off the shelf, what is the probability that it is a sample of mica?

The probability the cat will knock off a sample of mica is _____.

**4.**

**5.** Karine has a bag with 14 blue marbles, six purple marbles, and five green marbles. If she closes her eyes and picks a marble, what is the probability that she chooses a purple marble?

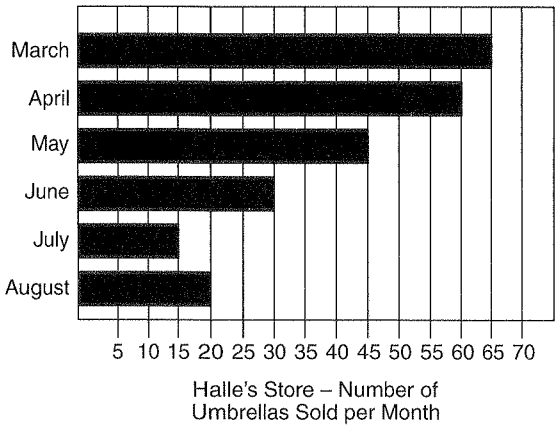
The probability of picking a purple marble is _____.

**5.**

NAME _____

# CHAPTER 16 PRACTICE TEST
## Graphs and Probability

Use the bar graph to answer each question.



Halle's Store – Number of Umbrellas Sold per Month

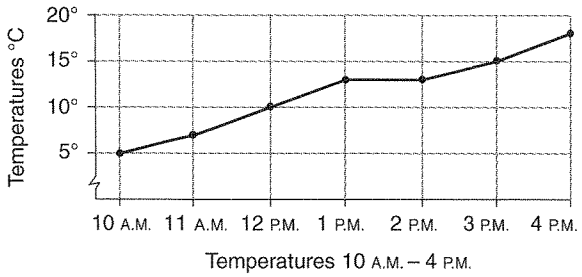
**1.** How many umbrellas did the store sell in July?

The store sold _____ umbrellas.

**2.** How many more umbrellas were sold in March than in August?

_____ more umbrellas were sold in March than in August.

Use the line graph to answer each question.



Temperatures 10 A.M. – 4 P.M.

**3.** What was the temperature at 12 P.M.?

The temperature was _____ °C.

**4.** How much did the temperature rise between 10 A.M. and 3 P.M.?

The temperature rose _____ degrees.

Find the mean of each set of numbers.

| | *a* | *b* |
|---|---|---|
| **5.** | 2, 3, 7, 9, 13, 15, 21 | 37, 38, 41, 41, 41, 43, 47, 48, 51 |
| | The mean is _____ . | The mean is _____ . |

Find the median of each set of numbers.

| | | |
|---|---|---|
| **6.** | 4, 2, 7, 9, 3, 5, 7, 1, 5 | 12, 15, 13, 18, 12, 19, 14, 14, 17 |
| | The median is _____ . | The median is _____ . |

CHAPTER 16

# CHAPTER 16 PRACTICE TEST
## Graphs and Probability (continued)

Find the mode of each set of numbers.

*a*

**7.** 3, 7, 4, 5, 9, 3, 7, 2, 1, 6, 4, 5, 7

The mode is _____.

*b*

14, 15, 17, 12, 14, 19, 15, 14, 17, 18, 11

The mode is _____.

Find the range of each set of numbers.

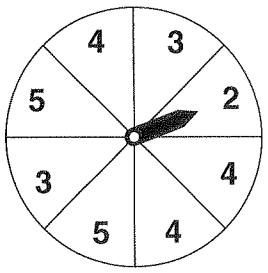
**8.** 4, 7, 6, 8, 4, 9, 5, 7, 6

The range is _____.

67, 25, 94, 57, 25, 43, 66, 19

The range is _____.

Refer to the spinner. Find each probability.




**9.** What is the probability of spinning a 2?

The probability is _____.

**10.** What is the probability of spinning a 5?

The probability is _____.

**11.** What is the probability of spinning a 4?

The probability is _____.

**12.** What is the probability of spinning a 1?

The probability is _____.

**13.** What is the probability of spinning a 3?

The probability is _____.