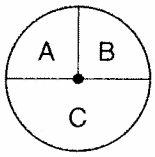
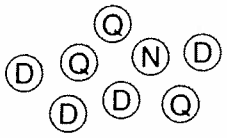
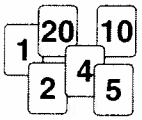
Name Date Time

STUDY LINK 7•1

Outcomes and Probabilities

Complete the table.

Experiment	Possible Outcomes	Outcomes Equally Likely?
Example: Spin the spinner. 	A, B, C	No. The area for C is twice as large as each of the other 2 areas.
1. Choose a coin. 		
2. Choose a factor of 20. 		

Use the problems from the table to answer the following questions. Express each probability as a percent.

3. What is the probability of selecting a quarter from the coins in Problem 1? _____

4. What is the probability of choosing a factor of 20 from the cards in Problem 2? _____

5. Suppose you spin the spinner from the Example in the table. Complete the number sentence below to determine the probability of the spinner landing on A or C.

_____ + _____ = _____

Probability of A Probability of C Probability of A or C

Practice

Simplify the expression using the order of operations.

6. $3.8 + 6.4 \div 0.2 - 1.8 * 2.6 - 3.2 \div 0.8$ _____

Name Date Time

LESSON 7•1

Carnival Games

At the carnival, you will play 10 games and will try to win as many prize coupons as possible. You must visit at least three different booths.

Booth 1

Two in a Row

Flip a coin twice. If the coin lands on the same side both times, you win a prize coupon.

Booth 2

Odd Tail Toss

Flip a coin once and roll a die once. If you get TAILS and an odd number, you win a prize coupon.

Booth 3

Roll It Up

Roll a die twice. If the second roll is a greater number than the first, you win a prize coupon.

Booth 4

10 or More

Roll a die twice. If you get 5 or greater both times, you win a prize coupon.

Booth 5

Make the Call

Predict the roll of a die. If that number comes up, you win a prize coupon.

Booth 6

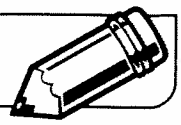
7 or More

Roll a die twice. If the total of the rolls is 7 or greater, you win a prize coupon.

Name Date Time

LESSON 7•1

Carnival Games Records



Below, record the number of each booth you visit. Make a tally mark for each prize coupon you win during your 10 games.

Booth Number	Number of Prize Coupons Won
Total Number of Prize Coupons Won	

1. Describe a strategy for winning the greatest number of prize coupons in 10 games if you must visit at least 3 different booths.

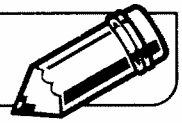
2. At which booths does it seem easy to win?

3. Describe how you would change the rules of one game to make it easier to win.

Name Date Time

LESSON 7·2

Random-Number Results



Outcome	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	All Groups	% of Total
1										
2										
3										
4										
5										
								Total		100%

Name Date Time

STUDY LINK 7•2

Using Random Numbers

1. A gym teacher is dividing her class into two teams to play soccer. Do you think she should choose the teams at random? _____

Explain. _____

_____

_____

2. The entire school is going to a baseball game. Some seats are better than others. Should the principal select the section where each class will sit at random? _____

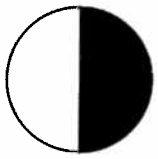
Explain. _____

_____

_____

_____

3. The spinner at the right has landed on black 5 times in a row. Renee says, "On the next spin, the spinner is more likely to land on white than on black."



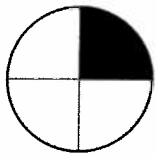
Do you agree or disagree with Renee? _____

Explain. _____

_____

_____

4. The spinner at the right has landed on black 5 times in row. Matthew says, "On the next spin, the spinner has a better chance of landing on white than on black."



Do you agree or disagree with Matthew? _____

Explain. _____

_____

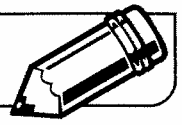
_____

_____

Name Date Time

LESSON 7•2

Predict Which Blocks Are in a Bag



1. Pick one person in your group to be the Director.

2. The Director selects 5 blocks and hides them in a bag. The blocks should NOT all be the same color. The group members should NOT see the blocks.

3. Group members take turns drawing one block out of the bag without looking. Each time a block is drawn, group members tally the color.

   Example (for first 5 draws):

red	////
blue	/

4. The person who drew the block puts it back into the bag, shakes the bag, and gives it to the next person to draw.

5. After 5 draws, each person writes a prediction for how many blocks of each color are in the bag.

6. Discuss the group's predictions. If everyone has the same prediction, the Director shows the contents of the bag and checks the prediction.

7. If your group does not agree on a prediction, take turns making 5 more draws (for a total of 10). Everyone predicts again and compares predictions.

8. Continue until the group agrees on a prediction. Then the Director shows the contents of the bag.

Repeat this experiment with a different number of blocks in the bag. Try it with 3 blocks. Try it with 7 blocks.

9. Does the number of blocks in the bag make a difference? _____

   Explain. _____

   _____

10. Do you think there must be a minimum number of draws to make an informed decision about the contents of the bag? _____

    Explain. _____

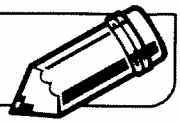
    _____

    _____

Name Date Time

LESSON 7•2

A Table of Random Digits



This is a table of 500 random digits, which includes the digits 0 through 9. Sometimes statisticians generate random numbers for projects or studies they are conducting by using a random digits table.

9	4	0	1	5	4	6	8	7	4	3	2	4	4	4	4	8	2	7	7	5	9	8	2	0
9	6	1	6	3	6	4	6	5	4	2	5	8	4	3	4	1	1	4	5	4	2	8	2	0
7	4	1	0	8	8	8	2	2	2	8	8	5	7	0	7	4	0	1	5	2	5	7	0	4
9	1	0	3	5	0	1	7	5	5	1	4	7	5	0	4	8	9	6	8	3	8	6	0	3
6	2	8	8	0	8	7	8	7	3	9	5	1	6	0	5	9	2	2	1	2	2	3	0	4
9	0	3	1	4	7	2	8	7	7	1	7	3	3	4	3	9	2	8	3	0	4	1	4	9
1	1	7	4	8	1	2	1	0	2	8	0	5	8	0	4	1	8	6	7	1	7	7	1	0
5	9	6	2	1	0	6	5	5	4	0	7	8	5	0	7	3	9	5	0	7	9	5	5	2
1	7	9	4	4	0	5	6	0	0	6	0	4	7	8	0	3	3	4	3	2	5	8	5	2
5	8	9	0	5	5	7	2	1	6	3	9	6	1	8	4	9	8	5	6	9	9	3	2	6
6	6	0	6	7	4	2	7	9	2	9	5	0	4	3	5	2	6	8	0	4	6	7	8	0
5	6	4	8	7	0	9	9	7	1	5	9	4	8	1	3	7	0	0	6	2	2	1	8	6
5	4	2	4	4	9	1	0	3	0	4	5	5	4	7	7	0	8	1	8	5	9	8	4	9
9	6	1	6	9	6	1	4	5	9	2	1	6	4	7	8	7	4	1	7	1	7	1	9	8
3	0	9	4	5	5	7	5	8	9	3	1	7	3	2	5	7	2	6	0	4	7	6	7	0
0	7	6	5	4	4	6	3	7	6	2	5	3	6	6	9	4	7	4	6	4	9	5	8	0
6	9	1	7	0	3	7	4	0	3	8	6	9	9	5	9	0	3	0	7	9	4	3	0	4
7	1	8	0	3	2	6	8	2	5	0	5	5	1	1	1	2	4	5	9	9	1	3	1	4
0	8	3	4	5	8	8	9	7	5	3	5	8	4	1	8	5	7	7	1	0	8	1	0	5
5	9	9	8	7	8	7	1	1	2	2	1	4	7	6	1	4	7	1	3	7	1	1	8	1

1. About what percent of the time would you expect each digit to appear? About _____

2. Use the table at the right to make a tally of the digits. Use a calculator to find what percent of the total each digit appears.

3. Are the digits random in the table of 500 digits?

_____

Digit	Tally of Appearances	Number of Appearances	Percent of Total
0			
1			
2			
3			
4			
5			
6			
7			
8			
9			
Total	500	500	100%

Name Date Time

STUDY LINK 7•3

Making Organized Lists

SRB 156

Solve each problem by making an organized list. The list in Problem 1 has been started for you.

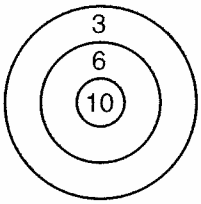
1. In how many ways can you make $0.60 using at least 1 quarter? You can only use quarters, dimes, and nickels.

Q D D D N

_____

Q	D	N
1	3	1

2. You throw three darts and hit the target at the right. List the different total points that are possible.

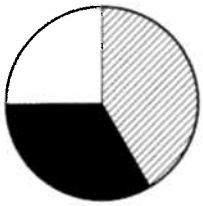


10 pts	6 pts	3 pts	Total pts

Use what you know about angle measures of sectors to find the probabilities in Problem 3.

Example:

Probability of landing on striped sector $= \frac{150^\circ}{360^\circ} = \frac{5}{12} = 41.67\%$



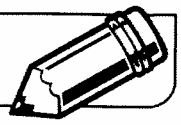
3. Find the probability of the spinner landing on

a. white. _____ **b.** black. _____

Name Date Time

LESSON 7•3

Coin-Toss Experiment



Step 1 Working alone, toss a coin 10 times for Round 1.
Enter a tally mark for each time a HEAD or a TAIL occurs in Round 1.

Coin-Toss Data

Round	HEADS	TAILS
1		
2		
3		
4		
5		
Totals		

Step 2 Repeat Step 1 for Rounds 2–5, for a total of 50 tosses.

Step 3 **a.** Record the total number of HEADS and TAILS for your 50 tosses from the frequency table above.

My Totals HEADS ____/50 TAILS ____/50

b. Record your partner's HEADS and TAILS totals for all 5 rounds.

My Partner's Totals HEADS ____/50 TAILS ____/50

c. Combine your totals with those of your partner.

Partnership Totals (Step 3a + Step 3b) HEADS ____/100 TAILS ____/100

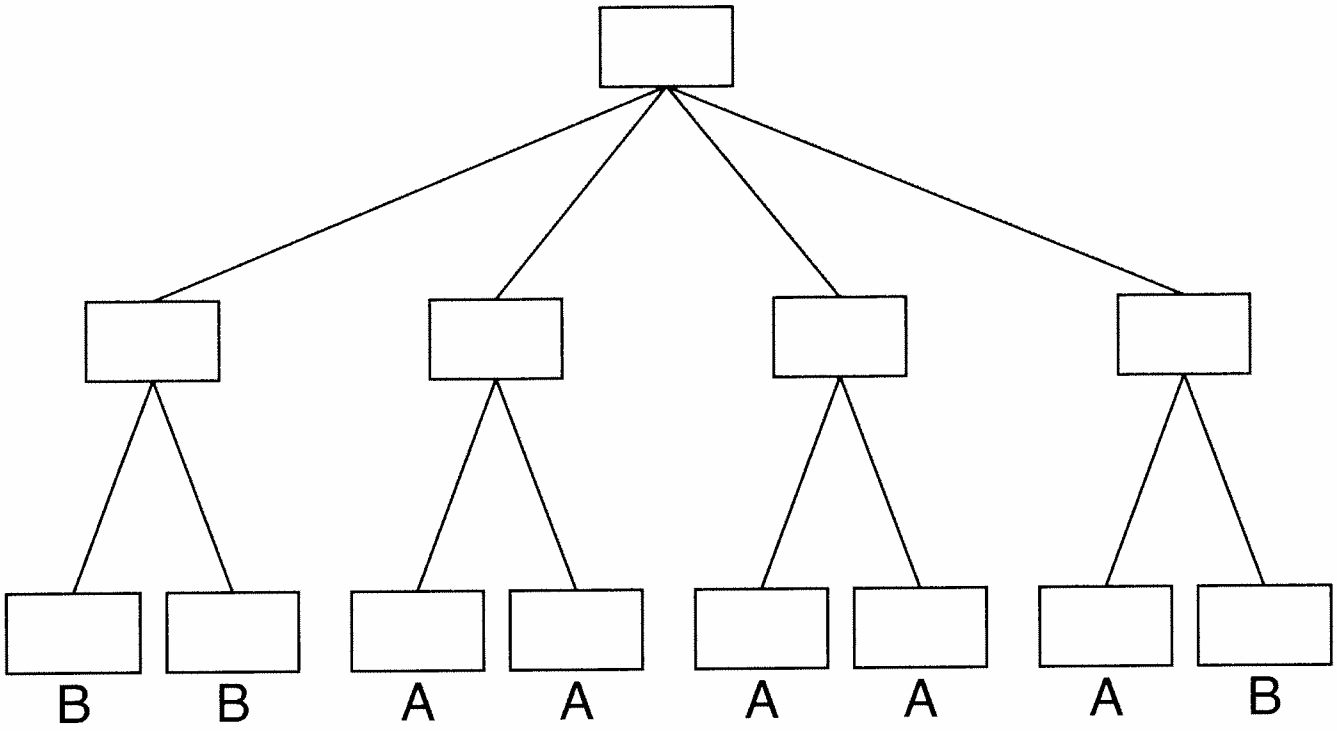
d. Now combine your partnership totals with those of the others in your group.

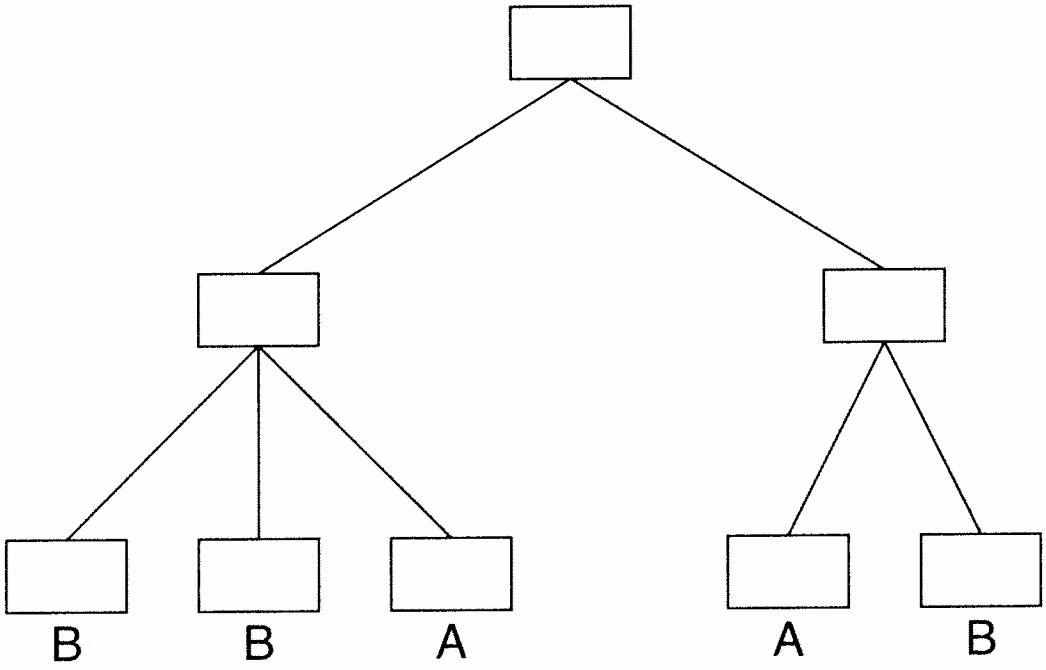
Group Totals (Step 3c + Step 3d) HEADS $\frac{\square}{\square}$ TAILS $\frac{\square}{\square}$

Name Date Time

LESSON 7•4

Tree Diagrams

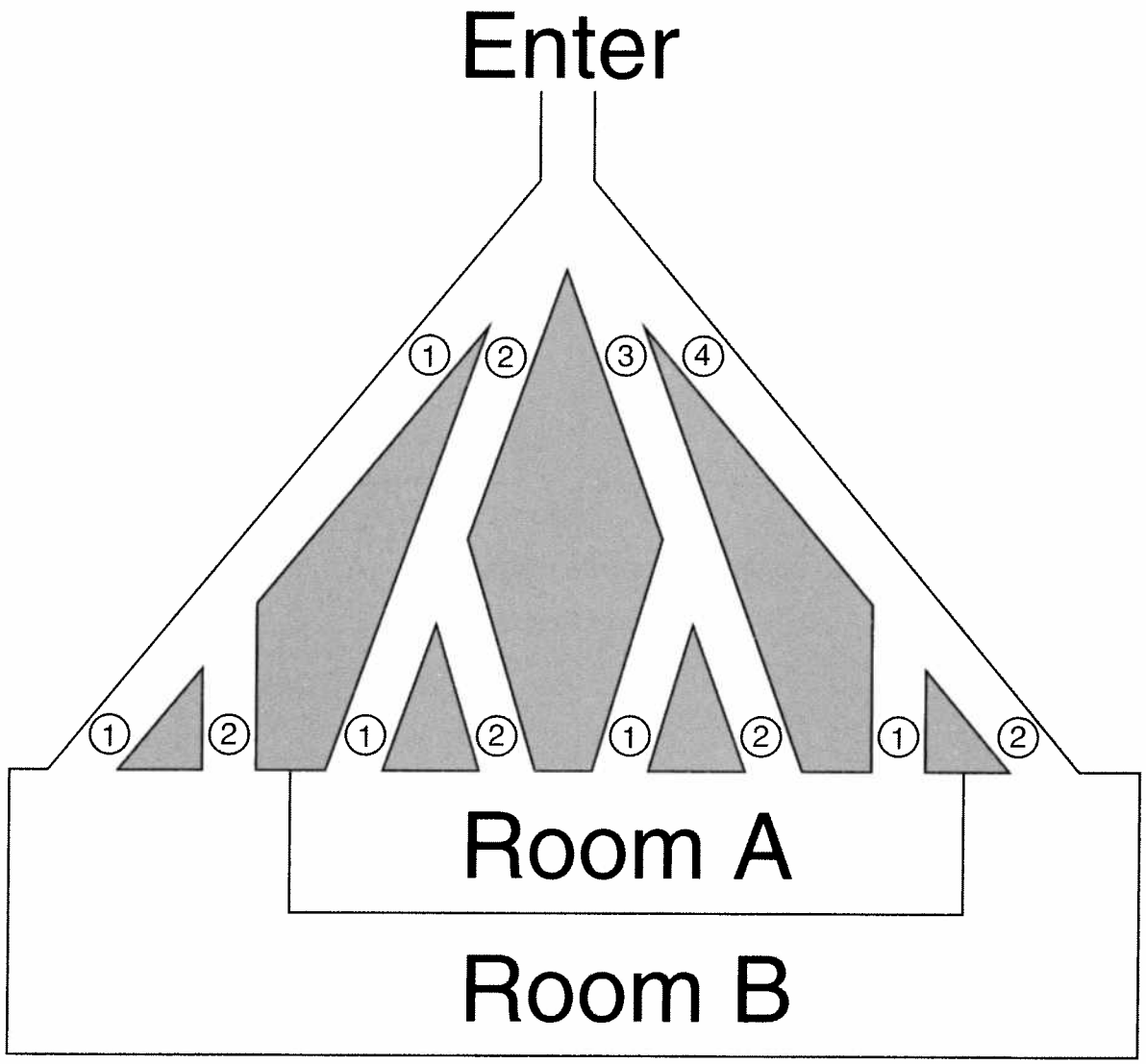




Name Date Time

LESSON 7•4

Maze



Name Date Time

STUDY LINK 7•4

Lists and Tree Diagrams

Suppose members of the hiking club are served a breakfast bag whenever they have a Saturday morning meeting. Members use the form at the right to place their orders.

Breakfast Order Form

Beverage
☐ Milk ☐ Water

Bagel
☐ Plain ☐ Raisin

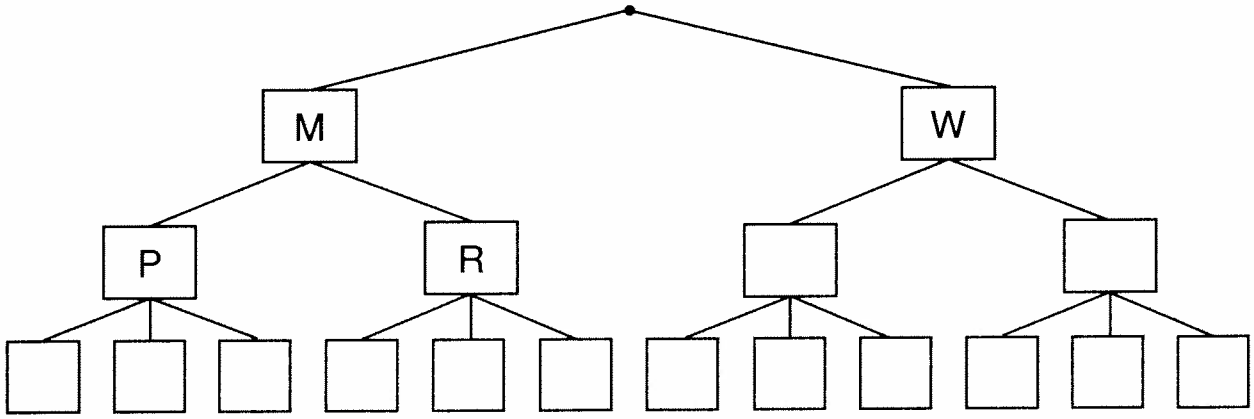
Fruit
☐ Apple ☐ Banana ☐ Orange

1. Complete the organized list of the possible breakfast bags.

Beverage	Bagel	Fruit
M	P	A
M	P	B

Beverage	Bagel	Fruit
W	P	A
W	P	B

2. Use your organized list to complete the tree diagram.



3. How many different breakfast bags are possible? _____

4. Suppose 60 members fill out an order form. About how many people would you expect to order milk and a plain bagel? _____ people

5. Suppose each of the 60 members brings 2 guests to the next Saturday meeting. About how many people would you expect to order water, a raisin bagel, and an orange? _____ people

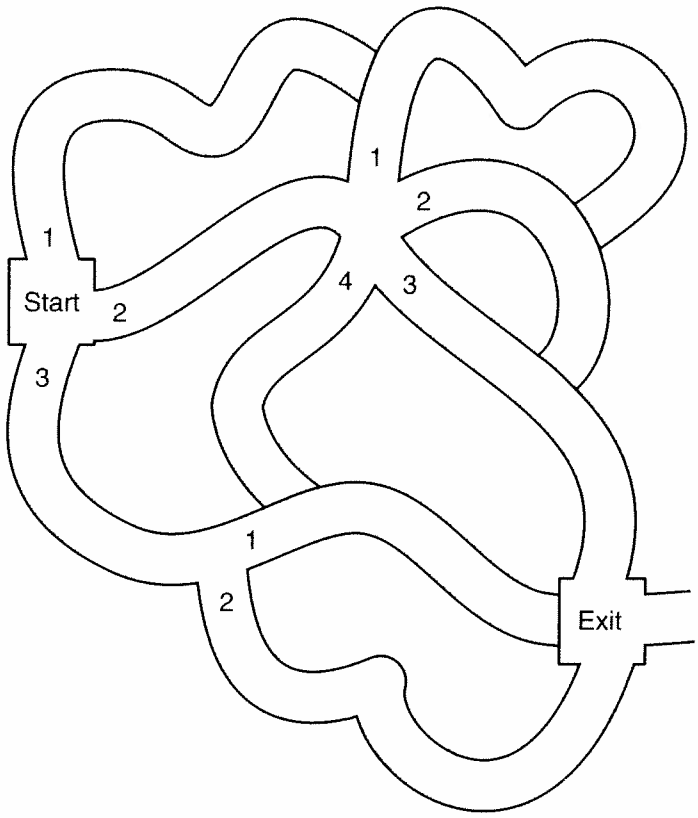
Name Date Time

LESSON 7•4

An Amazing Contest

The sixth graders at Bailey School want to raise money to buy a microscope. Students have created the maze shown below, which they will use for a contest. Each contestant pays a fee and tries to go from Start to Exit without retracing any steps. Anyone not ending up at a dead end wins a prize.

The paths at each intersection are numbered. When a contestant reaches an intersection, the contestant chooses the next path at random, using number cards.



Suppose you are going to try the maze. There are 3 different paths at Start. To decide which path to follow, pick a card, without looking, from a set of cards having 1, 2, and 3. If the card you draw is 1, follow Path 1. This leads to a dead end, so you lose.

If the card you choose at Start is 2, follow Path 2. This leads to an intersection that divides into 4 different paths. Pick from a set of cards having 1, 2, 3, and 4 to see which path to follow next. You win if you follow Path 3.

If you choose the number 3 at Start, follow Path 3. This leads to an intersection that divides into 2 different paths. Pick from a set of cards having 1 and 2 to see which path to follow next. You win if you follow Path 2.

Work with a partner. Take turns trying to get through the maze. Each of you should try a total of 6 times.

What fraction of the time did you and your partner reach Exit?

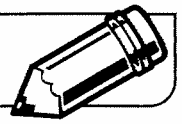
I reached Exit _____ of the time.

My partner reached Exit _____ of the time.

Name Date Time

LESSON 7•4

Analyzing the Amazing Contest



Make a tree diagram of the contest maze to help you solve the following problems.

1. If 60 people enter the maze, how many would you expect to reach the exit? _____

2. Suppose the class charges $5 per person to enter the maze. How much money would the class collect from the contestants? _____

3. If the prize for winning the Amazing Contest is $12, how much can the class expect to make? _____

4. If the goal for the class is to make $150, how much should the prize be? _____

5. If the class wants to break even, how much should the prize be? _____

6. Explain how you found the answer to Problem 4.

_____

_____

_____

_____

_____