Name _____ Date _____ Class _____

LESSON 9-2

Practice B

Experimental Probability

1. A number cube was thrown 150 times. The results are shown in the table below. Complete the table with the experimental probability for each outcome.

Outcome	1	2	3	4	5	6
Frequency	33	21	15	36	27	18
Probability						

A movie theater sells popcorn in small, medium, large and jumbo sizes. The customers of the first show purchase 4 small, 20 medium, 40 large, and 16 jumbo containers of popcorn. Find the probability of the purchase of each of the different size containers of popcorn.

2. *P*(small container)

_____

3. *P*(medium container)

_____

4. *P*(large container)

_____

5. *P*(jumbo container)

_____

If the theater has 260 customers for the second show, predict how many containers of each size popcorn will be sold based on the purchases during the first show.

6. Number of small containers sold

_____

7. Number of medium containers sold

_____

8. Number of large containers sold

_____

9. Number of jumbo containers sold

_____

10. The class president made 75 copies of the flyer advertising the school play. It was found that 6 of the copies were defective. What is the probability that a flyer will be printed properly? _____

11. If 400 more flyers must be printed, predict how many will be defective. _____

LESSON 9-2 Practice A
Experimental Probability

The results of an unbiased survey show the favorite instruments of 8th graders. Find the experimental probability for each.

Result	Piano	Drums	Trombone	Flute	Violin	Clarinet
Number	1	4	42	38	12	3

1. a student chooses clarinet — $\frac{3}{100}$ or 3%
2. a student chooses drums — $\frac{1}{25}$ or 4%
3. a student chooses flute — $\frac{19}{50}$ or 38%
4. a student chooses piano — $\frac{1}{100}$ or 1%
5. a student chooses trombone — $\frac{21}{50}$ or 42%
6. a student chooses violin — $\frac{3}{25}$ or 12%

A can contains color chips in 5 different colors. Thomas took a sample from the can and counted the colors. His results are in the table below.

Color	Blue	Pink	Black	White	Brown
Number	10	5	20	30	15

7. Find the experimental probability of choosing a pink color chip. — $\frac{1}{16}$ or 6.25%
8. Find the experimental probability of choosing a black or white color chip. — $\frac{5}{8}$ or 62.5%
9. Suppose someone chooses a color chip from the can 112 times. How many of them would you expect to be blue? — 14
10. If the can contained 2000 color chips, how many of them would you expect to be brown? — 375
11. Cheryl surveyed 30 students who ride the bus to school, 8 who walk, 9 who ride bicycles, and 3 who ride in cars. What is the experimental probability that the next student Cheryl surveys will walk to school? — $\frac{4}{25}$ or 16%

LESSON 9-2 Practice B
Experimental Probability

1. A number cube was thrown 150 times. The results are shown in the table below. Complete the table with the experimental probability for each outcome.

Outcome	1	2	3	4	5	6
Frequency	33	21	15	36	27	18
Probability	22%	14%	10%	24%	18%	12%

A movie theater sells popcorn in small, medium, large and jumbo sizes. The customers of the first show purchase 4 small, 20 medium, 40 large, and 16 jumbo containers of popcorn. Find the probability of the purchase of each of the different size containers of popcorn.

2. *P*(small container) — $\frac{1}{20}$ or 5%
3. *P*(medium container) — $\frac{1}{4}$ or 25%
4. *P*(large container) — $\frac{1}{2}$ or 50%
5. *P*(jumbo container) — $\frac{1}{5}$ or 20%

If the theater has 260 customers for the second show, predict how many containers of each size popcorn will be sold based on the purchases during the first show.

6. Number of small containers sold — 13
7. Number of medium containers sold — 65
8. Number of large containers sold — 130
9. Number of jumbo containers sold — 52
10. The class president made 75 copies of the flyer advertising the school play. It was found that 6 of the copies were defective. What is the probability that a flyer will be printed properly? — 92%
11. If 400 more flyers must be printed, predict how many will be defective. — 32

LESSON 9-2 Practice C
Experimental Probability

The developer of a Web page wants to track the number of hits to each link of the Web page. An automatic counter records the following hits in one week: home, 60 hits; FAQ, 20 hits; employment opportunities, 15 hits; products, 50 hits; order status, 30 hits; and contact information, 25 hits. Estimate the probability for each.

1. *P*(home) — $\frac{3}{10}$ or 30%
2. *P*(FAQ) — $\frac{1}{10}$ or 10%
3. *P*(products) — $\frac{1}{4}$ or 25%
4. *P*(order status) — $\frac{3}{20}$ or 15%
5. *P*(employment opportunities) — $\frac{3}{40}$ or 7.5%
6. *P*(contact information) — $\frac{1}{8}$ or 12.5%

Hayley bought a CD with 12 songs on it. She placed it in her CD changer and selected random play mode. Hayley kept a record of how the tracks played. The following table illustrates the results.

Track	1	2	3	4	5	6	7	8	9	10	11	12
Frequency	2	4	3	1	2	4	2	3	4	2	1	4

Find the experimental probability for each of the following.

7. *P*(track 1) — $\frac{1}{16}$ or $6\frac{1}{4}$%
8. *P*(track 4) — $\frac{1}{32}$ or $3\frac{1}{8}$%
9. *P*(track 5) — $\frac{1}{16}$ or $6\frac{1}{4}$%
10. *P*(track 2) — $\frac{1}{8}$ or $12\frac{1}{2}$%
11. *P*(track 11) — $\frac{1}{32}$ or $3\frac{1}{8}$%
12. *P*(track 13) — 0
13. *P*(track 8) — $\frac{3}{32}$ or $9\frac{3}{8}$%
14. *P*(track 3) — $\frac{3}{32}$ or $9\frac{3}{8}$%
15. *P*(track 12) — $\frac{1}{8}$ or $12\frac{1}{2}$%
16. If a coin is tossed 75 times and it lands on heads 36 times, what is the experimental probability of it landing on tails? — $\frac{13}{25}$ or 52%

LESSON 9-2 Reteach
Experimental Probability

A machine is filling 50-piece boxes of chocolate candies by choosing at random from a selection of six types of chocolate candies. An inspector records the results for one filled box in the table below.

Type	Dark	Light	Caramel	Dark Nuts	Light Nuts	Cream
Number	8	12	6	4	15	5

The inspector then expands the table to find the experimental probability.

$$\text{probability} = \frac{\text{number of type of chocolate}}{\text{total number of chocolates in box}}$$

Type	Dark	Light	Caramel	Dark Nuts	Light Nuts	Cream
Experimental Probability (ratio)	$\frac{8}{50}$, or $\frac{4}{25}$	$\frac{12}{50}$, or $\frac{6}{25}$	$\frac{6}{50}$, or $\frac{3}{25}$	$\frac{4}{50}$, or $\frac{2}{25}$	$\frac{15}{50}$, or $\frac{3}{10}$	$\frac{5}{50}$, or $\frac{1}{10}$
Experimental Probability (percent)	16%	24%	12%	8%	30%	10%

Find each sum for the chocolate experiment.

1. The sum of the experimental probability ratios.

probability = $\frac{8}{50} + \frac{12}{50} + \frac{6}{50} + \frac{4}{50} + \frac{15}{50} + \frac{5}{50} = \frac{50}{50}$ or 1

2. The sum of the experimental probability percents.

probability = 16% + 24% + 12% + 8% + 30% + 10% = 100% or 1

Complete the table to find the experimental probability.

3. Five types of seed are inserted at random in a pre-seeded strip ready for planting.

Type	Marigold	Impatiens	Snapdragon	Daisy	Petunia
Number	40	100	80	60	120
Experimental Probability (ratio)	$\frac{40}{400}$, or $\frac{1}{10}$	$\frac{100}{400}$, or $\frac{1}{4}$	$\frac{80}{400}$, or $\frac{1}{5}$	$\frac{60}{400}$, or $\frac{3}{20}$	$\frac{120}{400}$, or $\frac{3}{10}$
Experimental Probability (percent)	10%	25%	20%	15%	30%