

Practice

Form G

Probability Models

For Exercises 1–4, use the two-way frequency table below. It shows the number of one doctor's female patients who caught a cold one winter and whether or not they exercised regularly.

	Caught a cold	Did not catch a cold	Totals
Exercised	8	30	38
Did not exercise	10	2	12
Totals	18	32	50

- How many patients exercised? **38**
- What is the probability that a randomly chosen patient caught a cold and did not exercise? **0.2**
- What is the probability that a randomly chosen patient exercised and did not catch a cold? **0.6**
- What is $P(\text{did not exercise} \mid \text{did not catch a cold})$? **0.0625**

The table below shows the students in a physical education class. Use this information for Exercises 5–7.

	Has played tennis	Has not played tennis	Totals
Boys	10	6	16
Girls	10	4	14
Totals	20	10	30

- What is $P(\text{girl})$? **0.467**
- What is $P(\text{has not played tennis})$? **0.33**
- What is the probability that a randomly chosen student has played tennis given he is a boy? **0.625**

Practice (continued)

Form G

Probability Models

For Exercises 8–10, use the table below. It shows the relative frequencies of students in a science club who have pets, and whether or not they have a yard.

	Pets	No pets	Totals
Yard	0.60	0.05	0.65
No yard	0.25	0.10	0.35
Totals	0.85	0.15	1

8. What is the probability that a randomly selected student has a yard given that they have pets? **0.71**
9. What is $P(\text{does not have a yard} \mid \text{have no pets})$? **0.67**
10. **Error Analysis** Your friend determines that $P(\text{has a yard} \mid \text{has no pets})$ is 0.08. What error did your friend make? What is the correct probability? **The friend found the probability $P(\text{has no pets} \mid \text{has a yard})$; 0.33**

A biologist surveyed one type of plant growing on a wooded acre. Use his results, shown in the table below, for Exercises 11 and 12.

	Lobed Leaves	Non-lobed Leaves	Totals
Red Berries	12	48	60
No Red Berries	40	0	40
Totals	52	48	100

11. What is $P(\text{has red berries} \mid \text{has lobed leaves})$? **0.23**
12. What is $P(\text{has lobed leaves} \mid \text{has red berries})$? **0.2**