

Practice

Form G

Probability Distributions and Frequency Tables

A camp counselor records the number of camp attendees who participate in the daily activities. The results are shown in the table below.

Camp Activities

Activity	Number of People
Waterskiing	12
Hiking	18
Canoeing	13

Find the relative frequency of each activity.

1. Waterskiing $\frac{12}{43}$

2. Hiking $\frac{18}{43}$

3. Canoeing $\frac{13}{43}$

A spinner has 3 equal sections colored red, blue, and green. A student conducts an experiment where she spins the spinner twice and records the results. The results are shown in the frequency table below.

Colors	RR	RB	RG	BB	BR	BG	GG	GR	GB
Frequency	3	5	2	1	4	2	3	2	1

4. What is the probability of spinning red *exactly* once on the next two spins? $\frac{13}{23}$

5. What is the probability of spinning blue twice on the next two spins? $\frac{1}{23}$

At a mini-golf course, 20 friends each take 5 shots to try and get a hole-in-one. The results are shown in the probability distribution below. Complete the table.

Number of Holes-in-one	0	1	2	3	4	5
Frequency	2	6	5	4	2	1
Probability	6. $\frac{1}{10}$	7. $\frac{3}{10}$	8. $\frac{1}{4}$	9. $\frac{1}{5}$	10. $\frac{1}{10}$	11. $\frac{1}{20}$

Practice (continued)

Form G

Probability Distributions and Frequency Tables

12. A student records the favorite season for 50 students.

The results are shown in the table at the right.

- a. What is the relative frequency of spring? $\frac{13}{50}$
- b. What is the relative frequency of winter? $\frac{7}{50}$
- c. If the table included the number of responses for only three of the seasons, could you determine the relative frequency of the remaining season? Explain.

Yes. Since there are 50 respondents, the number of responses for the remaining season is the difference between 50 and the sum of the other three seasons. This number of responses is the numerator in the relative frequency, and 50 is the denominator.

Favorite Season

Season	Number of Responses
Winter	7
Spring	13
Summer	19
Fall	11

13. **Reasoning** How are the relative frequencies in a frequency table mathematically related? **The sum of the relative frequencies is equal to 1.**

14. A student randomly chooses songs on her MP3 player. Out of 30 different choices, she chooses 8 hip-hops songs, 4 country songs, 11 rock songs, and 7 classical songs. What is the probability that the student chooses a country song? $\frac{2}{15}$

15. **Writing** A certain probability distribution includes simplified fractions for some of the probabilities. Will the sum of the numerators be equal to the total frequency? Explain. **No. The total frequency is the sum of all the probability numerators before they are simplified. Once a probability fraction is simplified, the sum will be less than the total frequency.**

16. **Error Analysis** A cross-country coach makes the probability distribution below for the number of wins for some of the team members.

Number of Wins	0	1	2	3	4
Frequency	7	4	6	5	3
Probability	$\frac{7}{10}$	$\frac{4}{10}$	$\frac{6}{10}$	$\frac{5}{10}$	$\frac{3}{10}$

Explain the error the coach made when making the table. **The denominator of the probabilities is wrong; it should be 25 (the sum of the frequencies), not 10 (the sum of the number of wins).**