

Skills Practice

Probability Distributions

Identify the random variable in each distribution, and classify it as *discrete* or *continuous*. Explain your reasoning.

1. the number of strikes thrown by a pitcher
2. the mass of a cell
3. the number of chapters in a book
4. the number of chips in a package
5. **VIDEOS** The Carubas have a collection of 28 movies, including 12 westerns and 16 science fiction. Elise selects 3 of the movies at random to bring to a sleep-over at her friend's house. Find the probability of each selection.
 - a. $P(3 \text{ westerns})$
 - b. $P(3 \text{ science fiction})$
 - c. $P(1 \text{ western and } 2 \text{ science fiction})$
 - d. $P(2 \text{ westerns and } 1 \text{ science fiction})$
 - e. $P(3 \text{ comedy})$
 - f. $P(2 \text{ science fiction and } 2 \text{ westerns})$

6. **DICE** Wendy has recorded the following results from rolling a loaded die, one in which the probabilities of it landing on each side are not equal.

Value (\$)	1	2	3	4	5	6
Frequency	85	45	40	20	5	5

What is the expected value of one roll of the loaded die?

7. **DRAWINGS** Sarah can buy a \$10 ticket for each of the following drawings.

Drawing 1					
Prize Value	\$0	\$10	\$50	\$100	\$500
Frequency	0.80	0.14	0.03	0.02	0.01

Drawing 2					
Prize Value	\$0	\$10	\$100	\$500	\$1000
Frequency	0.90	0.075	0.015	0.005	0.005

- a. What is the expected value of two drawings?
- b. What is the standard deviation?
- c. Which drawing would you recommend for Sarah? Explain your reasoning.