

10 CHAPTER REVIEW



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- Multi-Language Glossary
- Vocabulary practice

REVIEW KEY VOCABULARY

- permutation, p. 684
- factorial, p. 684
- combination, p. 690
- Pascal's triangle, p. 692
- binomial theorem, p. 693
- probability, p. 698
- theoretical probability, p. 698
- odds, p. 699
- experimental probability, p. 700
- geometric probability, p. 701
- compound event, p. 707
- overlapping events, p. 707
- disjoint or mutually exclusive events, p. 707
- independent events, p. 717
- dependent events, p. 718
- conditional probability, p. 718
- random variable, p. 724
- probability distribution, p. 724
- binomial distribution, p. 725
- binomial experiment, p. 725
- symmetric distribution, p. 727
- skewed distribution, p. 727

VOCABULARY EXERCISES

1. Copy and complete: $A(n) _?$ is a selection of r objects from a group of n objects where the order of the objects selected is not important.
2. **WRITING** Explain the difference between the probability of an event and the odds in favor of the event.
3. **WRITING** You randomly select 10 cards, one by one, from a standard deck of 52 cards without replacement. You record the number of diamonds you get. Is this a binomial experiment? Explain.
4. **WRITING** Let event A be randomly selecting a green marble from a bag that contains red, green, and blue marbles. Let event B be randomly selecting a marble that is not red from the same bag. Are events A and B disjoint events? Explain.

REVIEW EXAMPLES AND EXERCISES

Use the review examples and exercises below to check your understanding of the concepts you have learned in each lesson of Chapter 10.

10.1 Apply the Counting Principle and Permutations

pp. 682–689

EXAMPLE

An ice skating competition features 8 skaters. How many different ways can the skaters finish the competition? How many different ways can 3 of the skaters finish first, second, and third?

There are $8!$ ways the skaters can finish the competition.

$$8! = 8 \cdot 7 \cdot 6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1 = 40,320$$

There are ${}_8P_3$ ways that 3 of the skaters can finish first, second, and third.

$${}_8P_3 = \frac{8!}{(8-3)!} = \frac{8!}{5!} = 336$$