

Parent Guide for Student Success

For use with Chapter 12

Chapter Overview One way that you can help your student succeed in Chapter 12 is by discussing the lesson goals in the chart below. When a lesson is completed, ask your student to interpret the lesson goals for you and to explain how the mathematics of the lesson relates to one of the key applications listed in the chart.

<i>Lesson Title</i>	<i>Lesson Goals</i>	<i>Key Applications</i>
12.1: The Fundamental Counting Principle and Permutations	Use the fundamental counting principle and permutations to count the number of ways an event can happen.	<ul style="list-style-type: none"> • Criminology • License Plates • Computer Security
12.2: Combinations and the Binomial Theorem	Use combinations to count the number of ways an event can happen. Use the binomial theorem to expand a binomial that is raised to a power.	<ul style="list-style-type: none"> • Menu Choices • Novels • Concerts
12.3: An Introduction to Probability	Find theoretical, experimental, and geometric probabilities.	<ul style="list-style-type: none"> • Music • Media Concern • Kyudo
12.4: Probability of Compound Events	Find probabilities of unions and intersections of two events. Use complements to find the probability of an event.	<ul style="list-style-type: none"> • Home Electronics • Botany • Potluck Dinner
12.5: Probability of Independent and Dependent Events	Find the probability of independent and dependent events.	<ul style="list-style-type: none"> • Trading Cards • Endangered Species • Retirement Plan
12.6: Binomial Distributions	Find binomial probabilities and analyze binomial distributions. Test a hypothesis.	<ul style="list-style-type: none"> • UFOs • Blood Drive • Personal Computers
12.7: Normal Distributions	Calculate probabilities using normal distributions. Use normal distributions to approximate binomial distributions.	<ul style="list-style-type: none"> • Shopping • Drive-Through • SAT Scores

Test-Taking Strategy

Pace yourself. Spend no more than a few minutes on each question. If a question is too difficult, skip it and go back to it if you have time.

You can help your student work on pacing by timing some practice tests and then discussing how they went. To aid discussion, you may wish to take notes on what your student has completed after certain intervals.

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Key Ideas Your student can demonstrate understanding of key concepts by working through the following exercises with you.

Lesson	Exercise
12.1	Alejandro Ray has 6 shirts, 4 pairs of pants, and 8 pairs of socks that he can wear to school. All of these articles of clothing are available on Monday. On Tuesday, Alejandro does not want to wear any of the things he wore on Monday. In how many different ways can he dress <i>for the 2 days</i> ?
12.2	Ten players are to be divided into two basketball teams, the Wolves and the Bears. In how many different ways can this be done? (<i>Hint: Once the 5 players have been chosen for the Wolves, the remaining 5 players must be on the Bears.</i>)
12.3	You have enough money to buy 3 of the top 20 CDs. If you randomly select the 3, what is the probability you get the top 3 CDs?
12.4	If there is a 25% chance of rain, what is the probability it will not rain?
12.5	The weather service has predicted 2 days of snow during the next 7 days. What is the probability that both days will fall on Friday, Saturday, or Sunday?
12.6	Suppose that for the next 10 games the Central High baseball team has an equal chance of winning or losing. What is the probability that Central High will win exactly 7 out of the 10 games?
12.7	The results of a test were normally distributed with a mean of 70 points and a standard deviation of 15 points. What percent of the students taking the test got over 85 points?

Home Involvement Activity

You Will Need: A calendar

Directions: Suppose the responsibility for doing dishes rotates among each member of your family who is over 7 years old and lives at home. When it's your turn, you do all the dishes for that day. No one does dishes more than one day per rotation. In how many different orders can you set up the rotation for doing dishes? Make a schedule for a month using as many different orders as possible.

12.1: 20,160 12.2: 252 12.3: $\frac{11}{140}$ 12.4: 75% 12.5: $\frac{7}{1}$ 12.6: $\frac{128}{15}$ 12.7: 16%

ANSWERS