



PREVIEW

What's the chapter about?

Chapter 11 is about sequences and series. In Chapter 11 you'll learn

- how to find terms of sequences and write algebraic rules to define sequences.
- how to use summation notation and find sums of arithmetic and geometric series.

KEY VOCABULARY

- Review
- integers, p. 3
- finite differences, p. 380

New

- terms of a sequence, p. 651
- sequence, p. 651
- series, p. 653
- summation notation, p. 653

finite sequence, p. 651

infinite sequence, p. 651

- arithmetic sequence, p. 659
- common difference, p. 659
- arithmetic series, p. 661
- geometric sequence, p. 666
- common ratio, p. 666
- geometric series, p. 668
- explicit rule, p. 681
- recursive rule, p. 681

PREPARE

extra help in this book

and on the Internet.

Are you ready for the chapter?

SKILL REVIEW Do these exercises to review key skills that you'll apply in this chapter. See the given reference page if there is something you don't understand.

STUDENT HELP	Write the given phrase as an algebraic expression. (Skills Review, p. 929)			
	1. 4 more than a number	2. 3 times a number	3. half of a number	
"Student Help" boxes	Evaluate the expression. (Review Example 3, p. 12)			
give you study tips and tell you where to look for	4. $3x - 7$ when $x = 3$	5. $\frac{x}{x+1}$ when $x = 8$	6. $3(2)^{n-1}$ when $n = 4$	

Show that the *n*th-order finite differences for the function of degree *n* are nonzero and constant. (Review Example 2, p. 380)

7.
$$f(x) = -3x^2 + 3$$
 8. $f(x) = x^3 + 2x^2$ **9.** $f(x) = x^4 - 5x + 1$

Solve the equation. (Review Example 3, p. 502; Example 4, p. 569)

10. $4^x = 16,384$	11. $2^{x-1} = 32$	12. $10 = \frac{5}{1-x}$	13. $24 = \frac{2}{1+x}$
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Here's a study strategy!

Learn by Teaching

Explain to a teacher, friend, or family member how to do an important skill in this chapter. Show an example and use words to describe your steps.

You can use a variation of this strategy when you are alone, too. Talk to yourself and explain your reasoning as you work toward an answer.