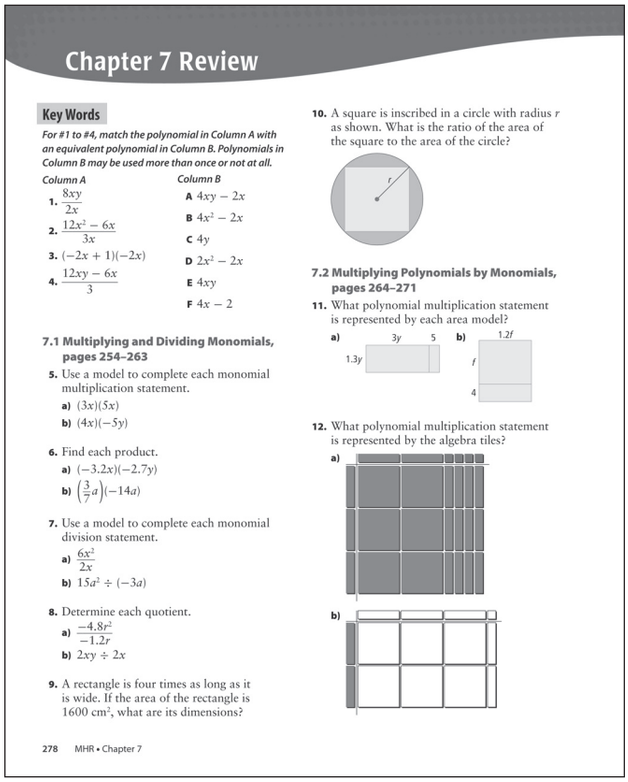
# Chapter Review 7



## Chapter 7 Review

**Key Words**

*For #1 to #4, match the polynomial in Column A with an equivalent polynomial in Column B. Polynomials in Column B may be used more than once or not at all.*

| Column A | Column B |
|---|---|
| 1. $\frac{8xy}{2x}$ | A $4xy - 2x$ |
| 2. $\frac{12x^2 - 6x}{3x}$ | B $4x^2 - 2x$ |
| 3. $(-2x + 1)(-2x)$ | C $4y$ |
| 4. $\frac{12xy - 6x}{3}$ | D $2x^2 - 2x$ |
| | E $4xy$ |
| | F $4x - 2$ |

**7.1 Multiplying and Dividing Monomials, pages 254–263**

5. Use a model to complete each monomial multiplication statement.
   a) $(3x)(5x)$
   b) $(4x)(-5y)$

6. Find each product.
   a) $(-3.2x)(-2.7y)$
   b) $\left(\frac{3}{7}a\right)(-14a)$

7. Use a model to complete each monomial division statement.
   a) $\frac{6x^2}{2x}$
   b) $15a^2 \div (-3a)$

8. Determine each quotient.
   a) $\frac{-4.8r^2}{-1.2r}$
   b) $2xy \div 2x$

9. A rectangle is four times as long as it is wide. If the area of the rectangle is 1600 cm$^2$, what are its dimensions?

10. A square is inscribed in a circle with radius $r$ as shown. What is the ratio of the area of the square to the area of the circle?




**7.2 Multiplying Polynomials by Monomials, pages 264–271**

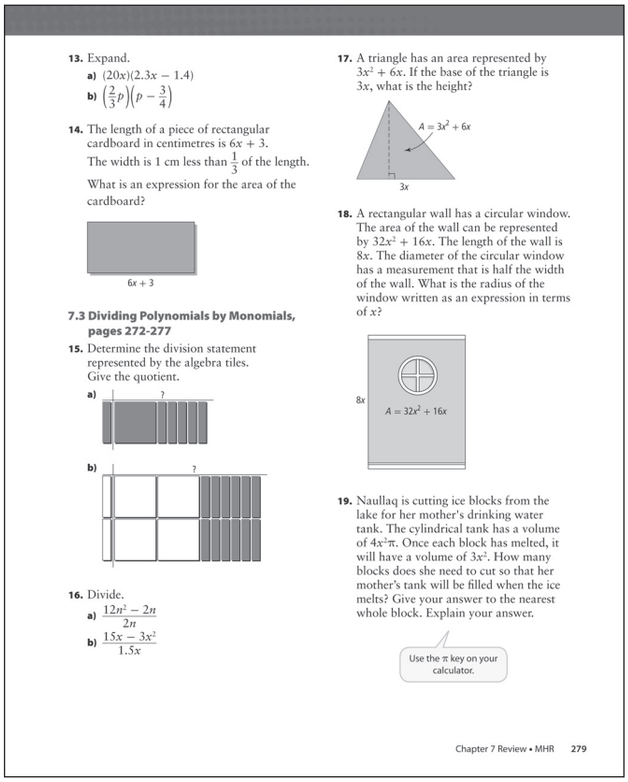
11. What polynomial multiplication statement is represented by each area model?




12. What polynomial multiplication statement is represented by the algebra tiles?





13. Expand.
   a) $(20x)(2.3x - 1.4)$
   b) $\left(\frac{2}{3}p\right)\left(p - \frac{3}{4}\right)$

14. The length of a piece of rectangular cardboard in centimetres is $6x + 3$. The width is 1 cm less than $\frac{1}{3}$ of the length. What is an expression for the area of the cardboard?




**7.3 Dividing Polynomials by Monomials, pages 272-277**

15. Determine the division statement represented by the algebra tiles. Give the quotient.




16. Divide.
   a) $\frac{12n^2 - 2n}{2n}$
   b) $\frac{15x - 3x^2}{1.5x}$

17. A triangle has an area represented by $3x^2 + 6x$. If the base of the triangle is $3x$, what is the height?




18. A rectangular wall has a circular window. The area of the wall can be represented by $32x^2 + 16x$. The length of the wall is $8x$. The diameter of the circular window has a measurement that is half the width of the wall. What is the radius of the window written as an expression in terms of $x$?




19. Naullaq is cutting ice blocks from the lake for her mother's drinking water tank. The cylindrical tank has a volume of $4x^2\pi$. Once each block has melted, it will have a volume of $3x^2$. How many blocks does she need to cut so that her mother's tank will be filled when the ice melts? Give your answer to the nearest whole block. Explain your answer.

Use the π key on your calculator.



***MathLinks 9*, pages 278–279**

**Suggested Timing**
40–50 minutes

**Materials**
- algebra tiles

**Blackline Masters**
Master 11 Algebra Tiles (Positive Tiles)
Master 12 Algebra Tiles (Negative Tiles)
BLM7–5 Section 7.1 Extra Practice
BLM7–7 Section 7.2 Extra Practice
BLM7–9 Section 7.3 Extra Practice

## Planning Notes

Encourage students to work individually or in pairs. If they encounter difficulties, remind them to refer to their Foldable for the chapter, their worked exercises for the section, or the modelled examples in the appropriate section of the student resource.

When they are done, have students make a list of questions they found difficult. Collect the lists and first discuss those questions that are common to a significant number of students. Encourage students who successfully answered those questions to describe their solutions and solution methods.

### *Meeting Student Needs*

- Encourage students to use their chapter Foldable and to add new notes if they wish.
- Students who require more practice on a particular topic may refer to **BLM7–5 Section 7.1 Extra Practice**, **BLM7–7 Section 7.2 Extra Practice**, and **BLM7–9 Section 7.3 Extra Practice**.

### ELL

For #9, ensure that students understand what is meant by *four times as long as it is wide*.

### Gifted and Enrichment

- Some students may already be familiar with the skills handled in this review. To provide enrichment and extra challenge for gifted students, go to www.mathlinks9.ca and follow the links.

### *Common Errors*

- Students may combine unlike terms when simplifying expressions.

**$R_x$** Encourage students first to arrange their solutions, which are not yet simplified, in descending order of variables and exponents. Then, they can combine variables with the same exponent.

| Assessment | Supporting Learning |
|---|---|
| **Assessment *for* Learning** | |
| **Chapter 7 Review**<br>The Chapter 7 Review is an opportunity for students to assess themselves by completing selected questions in each section and checking their answers against the answers in the back of the student resource. | • Allow students to complete the chapter review using any combination of manipulatives (e.g., algebra tiles), diagrams, or symbols to model and solve equations. If you do not have algebra tiles available in your classroom, provide students with **Master 11 Algebra Tiles (Positive Tiles)** and **Master 12 Algebra Tiles (Negative Tiles)**.<br>• Have students review their notes from their Foldable, Math Learning Log, and spider map, identify items that they found challenging, and do the questions related to those items.<br>• Have students check the What I Need to Work On section of their Foldable and do at least one question related to each listed item.<br>• Have students revisit any section that they are having difficulty with prior to working on the chapter test. |