Practice Test 7

Chapter 7 Practice Test

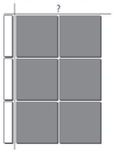
For #1 to #6, select the best answer.

1. Which monomial multiplication statement is represented by the algebra tiles?

A $(3x)(-2x) = -6x^2$
B $(2x)(-3x) = -6x^2$
C $(2x)(3x) = 6x^2$
D $(-2x)(-3x) = 6x^2$

2. What is the product of $3y$ and $2.7y$?
A $0.9y$ **B** $8.1y$
C $0.9y^2$ **D** $8.1y^2$

3. Which monomial division statement is represented by the algebra tiles?



A $\frac{-6x^2}{-3x} = -2x$
B $\frac{-6x^2}{-3x} = 2x$
C $\frac{6x^2}{-3x} = -2x$
D $\frac{6x^2}{-3x} = 2x$

4. Which is equivalent to $-27q^2 \div 9q$?
A $3q^2$ **B** $3q$
C $-3q$ **D** $-3q^2$

5. Which is equivalent to $\left(\frac{2}{3}x\right)(-3x - 6)$?
A $-2x^2 - 4x$ **B** $-2x - 4$
C $2x - 4$ **D** $2x^2 - 4x$

6. Calculate $\frac{15y^2 - 10y}{-5y}$.
A $-3y - 2$ **B** $-3y + 2$
C $3y - 2$ **D** $3y + 2$

Complete the statements in #7 and #8.

7. The expression $\frac{-24x^2 + 8xz}{4x}$ is equivalent to ▬.

8. A polynomial multiplication expression that is equivalent to $24d^2 - 12d$ is ▬.

Short Answer

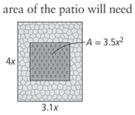
For #9 to #11, show all of the steps in your solutions.

9. Calculate $(2.4x)(4y)$.

10. What is the product of $12h$ and $\frac{-3}{4}h + 2$?

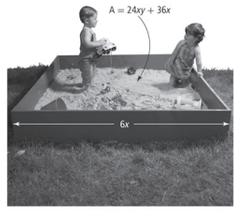
11. Simplify $\frac{2x^2 + 3x}{-3x}$.

12. Paula is building a rectangular patio. It will have a square flower bed in the middle. The rest will have paving stones. The patio will have a length of $4x$ and a width of $3.1x$. The area of the flower bed will be $3.5x^2$. What area of the patio will need paving stones?



13. A sports field is 15 m longer than twice its width. What is an expression for the area of the field in terms of its width, w? Expand the expression.

14. The area of a rectangular sandbox can be expressed as $24xy + 36x$. The width of the sandbox is $6x$. What is the perimeter of the sandbox?



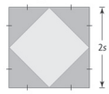
Extended Response

15. a) What error did Karim make when completing the division statement shown?

$$\frac{-18d^2 - 6d}{3d} = \frac{-18d^2}{3d} + \frac{6d}{3d} = -6d + 2$$

b) Show the correct method.

16. A square with a side length of $2s$ has a smaller square inscribed. The vertices of the smaller square are at the midpoints of the sides of the larger square. What is the ratio of the area of the larger square to the area of the smaller square? Express your answer in its simplest form.



Math Link: Wrap It Up!

You have been hired to create a landscape design for a park. The park is rectangular and covers an area of 500 000 m². The park includes the following features:
- a play area covered with bark mulch
- a sand area for playing beach volleyball
- a wading pool

The features in your design include the following shapes:
- a circular area
- a rectangular area
- a parallelogram-shaped area with the base three times the height

The features of your park have varying depths.

Include the following in your design:
- a scale drawing showing the layout of each of the required features
- a list showing the area of each feature and the volume of each material (mulch, sand, and water) required to complete the park
- a polynomial expression for the area and volume of each feature, using a variable for one of the dimensions

***MathLinks 9*, pages 280–281**

Suggested Timing
40–50 minutes

Materials
- algebra tiles

Blackline Masters
Master 11 Algebra Tiles (Positive Tiles)
Master 12 Algebra Tiles (Negative Tiles)
BLM 7–11 Chapter 7 Test

Planning Notes

Have students start the practice test by writing the question numbers in their notebook. Have them indicate which questions they need a little help with, a lot of help with, or no help with. Have students first complete the questions they know they can do. Then, have them complete the questions they know something about. Finally, have students do their best on the questions that they are still struggling with.

This practice test can be assigned as an in-class or take-home assignment. Provide students with the number of questions they can comfortably do in one class. These are the minimum questions that will meet the related curriculum outcomes: #1–6, 9–12.

Study Guide

Question(s)	Section(s)	Refer to	The student can …
#1, 2, 9, 12, 16			✓ model multiplication of a monomial by a monomial using models and symbols
#3, 4, 16			✓ model division of a monomial by a monomial using models and symbols
#5, 8, 10, 13			✓ model multiplication of a polynomial by a monomial using models and symbols
#6, 7, 11, 14, 15			✓ model division of a polynomial by a monomial using models and symbols
#2, 4, 6, 7, 9, 11, 12, 14, 15, 16			✓ simplify polynomial expressions
#15			✓ identify errors in a simplification of a polynomial expression

Answers

Chapter 7 Practice Test

1. B **2.** D **3.** C **4.** C **5.** A **6.** B **7.** $-6x + 2z$

8. Example: $(12d)(2d - 1)$ **9.** $9.6xy$ **10.** $-9h^2 + 24h$

11. $-\frac{2}{3}x - 1$ **12.** $8.9x^2$ **13.** $2w^2 + 15w$ **14.** $12x + 8y + 12$

15. a) The addition sign should be a subtraction sign.

b) $\frac{-18d^2 - 6d}{3d} = \frac{-18d^2}{3d} - \frac{6d}{3d}$

$= -6d - 2$

16. $4s^2 : 2s^2 = 2 : 1$

Assessment	Supporting Learning
Assessment *as* Learning	
Chapter 7 Self-Assessment Have students review their earlier responses in the What I Need to Work On section of their Foldable.	• Have students use their responses on the practice test and work they completed earlier in the chapter to identify areas in which they may need to reinforce their understanding of skills or concepts. Before the chapter test, coach them in the areas in which they are having difficulties.
Assessment *of* Learning	
Chapter 7 Test After students complete the practice test, you may wish to use **BLM 7–11 Chapter 7 Test** as a summative assessment.	• Consider allowing students to use their Foldable and spider map. • Allow students to use manipulatives (e.g., algebra tiles) and diagrams to assist them as they complete the test. If algebra tiles are not available, provide students with **Master 11 Algebra Tiles (Positive Tiles)** and **Master 12 Algebra Tiles (Negative Tiles)**. • Since the Wrap It Up! and Challenges provide additional reinforcement of chapter content, you may wish to have students complete these activities before doing the Chapter 7 Practice Test and **BLM 7-11 Chapter 7 Test**. • Consider using the Challenges to assess the knowledge and skills of students who have difficulty with tests.