



# Chapter 6 Test

## Objective 1: 6.EE.A.1

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Write and evaluate numerical expressions involving whole-number exponents.

Write each product using an exponent.

1.  $6 \times 6 \times 6$

2.  $10 \times 10 \times 10 \times 10 \times 10$

Write each power as a product of the same factor. Then find the value.

3.  $7^2$

4.  $5^3$

Find the value of each expression.

5.  $12 - 2^3$

6.  $16 + 4^4 - 72$

7.  $5^3 + 4 - 9$

8.  $2^3(9 + 2)$

9.  $16 - 4^2 + 8$

10.  $(16 - 4) + 2^5$

## Objective 2: 6.EE.A.2.C

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Evaluate expressions at specific values of their variables.

Complete the table.

Algebraic Expressions	Variables	Numbers	Operations
11. $5d + 2c$			
12. $5w - 4y + 28$			
13. $xy \div 4 + 3m - 6$			

Evaluate each expression if  $m = 4$  and  $n = 5$ .

14.  $m + m$

15.  $n - m$

16.  $mn$

Evaluate each expression if  $x = 7$ ,  $y = \frac{1}{2}$ , and  $z = 8$ .

17.  $x + y + z$

18.  $x + 2z$

19.  $4y$

20.  $9y + (2x + 1)$

**Objective 3: 6.EE.A.2.A**

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*Write expressions that record operations with numbers and with letters standing for numbers.***Define a variable (21-23) and write each phrase as an algebraic expression.****21.** seven feet more than twice the height.**22.** twice the number of exercises, minus 2.**23.** two years less than Carlos's age.**24.** One-half of  $g$  is subtracted from 8**25.** Add three-fourths to 9 times  $r$ **26.** 6 is added to one-half of  $f$ **27.** Subtract five-sixths from 5 times  $f$ **28.** Add 3 to 5 times  $b$ **29.** Take away 7 from 2 times  $h$ **30.** 3 times the sum of  $c$  and 6**Objective 4: 6.EE.A.4**

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*Identify when two expressions are equivalent***Determine whether the two expressions are equivalent. If so, tell what property is applied. If not, explain why.****31.**  $7(3 \cdot 2)$  and  $21 \cdot 14$ **32.**  $16 \div 8$  and  $8 \div 16$ **33.**  $27 \cdot 1$  and 1

34.  $16(2 + 18)$  and  $32 + 18$

35.  $12 - (5 - 2)$  and  $(12 - 5) - 2$

Draw lines to match the equivalent expressions.

$2(a - 3)$

$12$

$4b \cdot 9$

$-6x$

$x(3 - 9)$

$2a - 6$

$12(2 \div 2)$

$9 \cdot 4b$

$3(x - y)$

$3x - 3y$

**Objective 5: 6.EE.A.3**

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*Apply the properties of operations to generate equivalent expressions (specifically apply the distributive property to the expression).*

Use the distributive property to find each expression mentally. Show the steps you used.

41.  $5 \times 86$

42.  $7 \times 126$

Use the Distributive Property to rewrite each algebraic expression.

43.  $5(2x + 6)$

44.  $8(4 + x)$

45.  $6(3x + 4)$

Factor each expression.

46.  $21x + 15y$

47.  $2x + 14y$

48.  $15x + 10y$

49.  $27 + 9v$

50.  $33 + 11s$

Apply the properties of operations to generate equivalent expressions.

Simplify each expression.

51.  $13x + 2x$

52.  $2x + 5 + 6x$

53.  $6(6x + 8x)$

54.  $4(9x + 3)$

55. **AMUSEMENT PARKS** Four friends went to a local amusement park. Three of the friends bought ride tickets for  $x$  dollars, plus a game pass for \$10. The other friend bought just a ride ticket. **Write and simplify** an expression showing the amount of total money spent.

a) Write:

b) Simplify:

56. **ALGEBRA** Translate and simplify the expression: the sum of fifteen and a number plus twelve.

a) Write:

b) Simplify:

57. **AGE** Julianna is  $x$  years old. Her sister is 2 years older than her. Her mother is 3 times as old as her sister. Her Uncle Rich is 5 years older than her mother. Write and simplify an expression representing Rich's age.

a) Write:

b) Simplify:

# Chapter 6 • Chapter Test

Student Name: \_\_\_\_\_ Class Hour: \_\_\_\_\_

		/ 10	Retest? Y / N
Objective 1	6.EE.A.1- Write and evaluate numerical expressions involving whole-number exponents.	_____	Y / N
Objective 2	6.EE.A.2.C- Evaluate expressions at specific values of their variables.	_____	Y / N
Objective 3	6.EE.A.2.A- Write expressions with letters standing for numbers.	_____	Y / N
Objective 4	6.EE.A.4- Identify when two expressions are equivalent	_____	Y / N
Objective 5	6.EE.A.3- Apply the distributive property to generate equivalent expression.	_____	Y / N
Objective 6	6.EE.A.3- Apply the properties of operations to generate equivalent expressions.	_____	Y / N

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	<b>Objective 1:</b> 6.EE.A.1 Write and evaluate numerical expressions involving whole-number exponents.	<b>Objective 2:</b> 6.EE.A.2.C Evaluate expressions at specific values of their variables.	<b>Objective 3:</b> 6.EE.A.2.A Write expressions with letters standing for numbers.	<b>Objective 4:</b> 6.EE.A.4 Identify when two expressions are equivalent	<b>Objective 5:</b> 6.EE.A.3 Apply the distributive property to generate equivalent expression.	<b>Objective 6:</b> 6.EE.A.3 Apply the properties of operations to generate equivalent expressions.		