

**Lesson**  
**7.4****Review & Refresh****Factor the expression using the GCF.**

1.  $16 + 32$

2.  $65 + 90$

3.  $75 - 10$

4.  $81 - 27$

5.  $16x + 8$

6.  $24 + 36x$

7.  $24y - 32$

8.  $64 - 12y$

9. A dog weighs  $2p + 4$  pounds after  $p$  months.

a. What is the weight of the dog after 8 months?

b. What is the weight of the dog after 2 years?

**Simplify the expression.**

10.  $(b + 12) + (-9)$

11.  $-4(2f + 3)$

12.  $2(3 + h + 8)$

13.  $-4(5 - j + 1)$

14.  $-2n + 4(n + 1)$

15.  $-6 - 3(n - 4)$

16. In a game, you start with 200 points. You lose 4 points for every incorrect answer.

a. Write an expression to represent your score after  $a$  incorrect answers.

b. What is your score after 17 incorrect questions?

**Write the algebraic expression as a phrase.**

17.  $-v \div 8$

18.  $2u + 1$

19.  $3r - 4$

20.  $6 \div t + 3$

**Lesson**  
**7.4**

**Review & Refresh** (continued)

21. You are  $x$  years old. Your brother is 3 years older. Your mother is 3 times older than your brother.
- Write an expression to represent your mother's age.
  - If you are 10 years old, how old is your brother and your mother?

Evaluate the expression when  $a = 2$ ,  $b = -6$ , and  $c = -5$ .

22.  $40 \div c$       23.  $c - b$       24.  $24 \div (2a)$       25.  $ab$

26. Families can buy holiday pies with a discount for each pie. One family has bought pies for a total cost of  $(12x - 36)$  dollars.
- Factor the expression.
  - What is the discount?

**Lesson**  
**7.4**

**Self-Assessment**

Use the scale to rate your understanding of the learning target and the success criteria.

- 1 I don't understand yet.    2 I can do it with help.    3 I can do it on my own.    4 I can teach someone else.

	Rating	Date
<b>7.4 Factoring Expressions</b>		
<b>Learning Target:</b> Factor numerical and algebraic expressions.	1   2   3   4	
I can use the Distributive Property to factor numerical expressions.	1   2   3   4	
I can identify the greatest common factor of terms including variables.	1   2   3   4	
I can use the Distributive Property to factor algebraic expressions.	1   2   3   4	
I can interpret factored expressions in real-life problems.	1   2   3   4	

**Chapter  
7****B.E.S.T. Test Prep**

1. Which expressions are negative?
  - (A)  $-6^2$
  - (B)  $-15 + (-8)$
  - (C)  $-10 - (-15)$
  - (D)  $(-9)^2$
  - (E)  $-6 + (-4)$
  - (F)  $-12 - (-7)$
2. Which ordered pairs are on an axis?
  - (A)  $(-3, 0)$
  - (B)  $(-2, 4)$
  - (C)  $(0, -5)$
  - (D)  $(0, 0)$
  - (E)  $(4, -2)$
  - (F)  $(-1, 1)$
3. Which expression simplifies to  $-x - y$ ?
  - (A)  $-2(x + y) - 3(x - y)$
  - (B)  $-2(x + y) - 3(x + y)$
  - (C)  $2(x + y) - 3(x + y)$
  - (D)  $2(x + y) - 3(x - y)$
4. Which expression has the greatest common factor?
  - (A)  $16a + 40b$
  - (B)  $88a + 33b$
  - (C)  $72a - 24b$
  - (D)  $80a - 32b$
5. An integer is less than 5, but greater than  $-7$ . What are the greatest and least possible values of the integers?
  - (A) Greatest integer: 5; Least integer:  $-6$
  - (B) Greatest integer: 4; Least integer:  $-6$
  - (C) Greatest integer: 5; Least integer:  $-7$
  - (D) Greatest integer: 4; Least integer:  $-7$
6. You have 24 crayons, 12 pencils, and 10 markers. What is the ratio of crayons to pencils to markers?
  - (A)  $12 : 6 : 5$
  - (B)  $4 : 3 : 2$
  - (C)  $12 : 4 : 1$
  - (D)  $4 : 2 : 1$

# Chapter 7

## B.E.S.T. Test Prep (continued)

7. This question has **two** parts.

A company rents bicycles for \$15 per hour plus a \$40 rental fee.

### Part A

What is the expression that represents the cost of renting the bicycle for  $h$  hours?

- Ⓐ  $40h + 15$  Ⓒ  $h + 15 + 40$   
 Ⓑ  $15h + 40$  Ⓓ  $h - 15 + 40$

### Part B

What is the cost, in dollars, of renting a bicycle for 3 hours?

⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖
⊘	⊘	⊘	⊘	⊘	⊘	⊘	⊘
⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9

8. Evaluate the expression when  $a = 6$ ,  $b = -5$ , and  $c = -8$  to determine if the result is positive or negative.

	Positive	Negative
$3a - 12$	Ⓐ	Ⓑ
$b + 2c$	Ⓒ	Ⓓ
$b^2 - ac$	Ⓔ	Ⓕ

9. An online streaming service charges \$2 for standard movies and \$10 for new movies. You watch  $x$  standard movies and  $y$  new movies in a month. Which expression represents the total cost?

- Ⓐ  $(2 + 10)(x - y)$  Ⓒ  $2x - 10y$   
 Ⓑ  $(2 + 10)(x + y)$  Ⓓ  $2x + 10y$

# Chapter 7

## B.E.S.T. Test Prep (continued)

10. You earn 10 points for a correct move. You lose 20 points for an incorrect move. You have 16 correct and 2 incorrect moves. How many points did you score?
11. A basketball player made 16 out of 20 free throws. What percent of free throws did the player make?

-	-	-	-	-	-	-
/	/	/	/	/	/	/
•	•	•	•	•	•	•
0	0	0	0	0	0	0
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9

-	-	-	-	-	-	-
/	/	/	/	/	/	/
•	•	•	•	•	•	•
0	0	0	0	0	0	0
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9

12. Six friends share the cost of a dinner that cost  $c$  dollars. Each person leaves a

\$3 tip. The expression that represents the cost for each person is

- Ⓐ  $6c + 3$   
 Ⓑ  $c \div 6 + 3$   
 Ⓒ  $c - 6 + 3$

The cost per person for a \$120 dinner is

- Ⓐ \$23  
 Ⓑ \$33  
 Ⓒ \$43

13. You ride your bike  $1\frac{3}{5}$  miles to and from school 4 times in 1 week. How many miles did you ride your bike?

- Ⓐ  $6\frac{2}{5}$  miles  
 Ⓑ  $8\frac{3}{5}$  miles  
 Ⓒ  $12\frac{4}{5}$  miles  
 Ⓓ  $14\frac{2}{5}$  miles

**Chapter  
7**

**B.E.S.T. Test Prep (continued)**

14. How many inches are there in 4.5 yards? 15. 125% of what number is 300?

-	-	-	-	-	-	-
/	/	/	/	/	/	/
.	.	.	.	.	.	.
0	0	0	0	0	0	0
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9

-	-	-	-	-	-	-
/	/	/	/	/	/	/
.	.	.	.	.	.	.
0	0	0	0	0	0	0
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9

16. What is the GCF of 180, 270, and 300?

-	-	-	-	-	-	-
/	/	/	/	/	/	/
.	.	.	.	.	.	.
0	0	0	0	0	0	0
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9

17. The elevation of a plane is 20,000 feet. The elevation is 16,000 feet after 20 minutes. What is the mean change in elevation per minute?

-	-	-	-	-	-	-
/	/	/	/	/	/	/
.	.	.	.	.	.	.
0	0	0	0	0	0	0
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9

18. Which set of numbers is written correctly in order from least to greatest?

- (A) -4.55, -4.54, -4.5, -4.45, -4.4  
 (B) -4.55, -4.45, -4.5, -4.54, -4.4  
 (C) -4.4, -4.54, -4.5, -4.45, -4.55  
 (D) -4.4, -4.45, -4.5, -4.54, -4.55