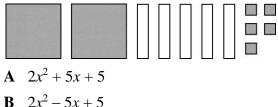Name: _____   Date: _____

Chapter 3 Test

Multiple Choice

For each question, select the best answer.

1. Which expression does this model represent?

- **A** $2x^2 + 5x + 5$
- **B** $2x^2 - 5x + 5$
- **C** $2x^2 - 5x - 5$
- **D** $2x^2 + 5x - 5$

2. What is the value of $\left(-\dfrac{3}{8}\right)^2$?

- **A** $-\dfrac{9}{64}$
- **B** $-\dfrac{6}{16}$
- **C** $\dfrac{9}{64}$
- **D** $-\dfrac{6}{16}$

3. Which is the result when $(m^4)^2 \div m^3$ is simplified?

- **A** m^3
- **B** m^5
- **C** m^2
- **D** m^9

4. What is the value of $(2^2)^4$?

- **A** 16
- **B** 64
- **C** 256
- **D** 128

5. What is the value of $\dfrac{3^6}{3^3}$?

- **A** 3
- **B** 9
- **C** 1
- **D** 27

6. Which group has 3 like terms?

- **A** $4b$ $3a$ $2b$
- **B** $-mn^2$ $4mn^2$ $-5mn^2$
- **C** $3x^2y$ $-x^2y$ $4xy^2$
- **D** $2x$ $2y$ $2z$

7. The expression $3a^2 + 2a^3 + b$ is a:

- **A** monomial
- **B** binomial
- **C** trinomial
- **D** term

8. The degree of $6x^4y + xy^3 + 1$ is:

- **A** 2
- **B** 3
- **C** 4
- **D** 5

9. $4a + 2b - a - 3b$ can be simplified to:

- **A** $3a - b$
- **B** $5a - 5b$
- **C** $3a - 5b$
- **D** $3a + b$

Short Response

10. Write as a single power, then evaluate.

    a) $(-3)^5 \times (-3)^4 \div (-3)^6$

    b) $\dfrac{8^7 \times 8^3}{\left(8^2\right)^4}$

11. Simplify.

    a) $v^9 \div v \div v^3$

    b) $(b^3)^3 \times 2b^5$

    c) $-12m^3n^2 \div 3mn^2$

    d) $(-4x^2y^5)^3$

12. Simplify.

    a) $(3x - 1) + (4 - 2x)$

    b) $(2 + y) - (3 - 2y)$

13. Expand and simplify.

    a) $5(p + 3) + 4(p - 6)$

    b) $6[x - (2x + 1)]$

BLM 3.CT.1 Chapter 3 Test ANSWERS

1. B   **2.** C   **3.** B   **4.** C   **5.** D
6. B   **7.** C   **8.** D   **9.** A
10. **a)** $(-3)^3$; -27 **b)** 8^2; 64
11. **a)** v^5 **b)** $2b^{14}$ **c)** $-4m^2$ **d)** $-64x^6y^{15}$
12. **a)** $x + 3$ **b)** $-1 + 3y$
13. **a)** $9p - 9$ **b)** $-6x - 6$
14. **a)** $N = 2x + 5$ **b)** $A = 15x + 35$ **c)** $170
15. **a)** $A = 8000 + 8n$ **b)** $1 608 000

Extend
Show all your work.

14. Katherine and Christine work at the same restaurant. Each week, Katherine works 5 more hours than Christine. Katherine earns $7.00 per hour and Christine earns $8.00 per hour.

    a) Write a simplified expression to represent the total number of hours Katherine and Christine work in one week.

    b) Write a simplified expression to represent the total amount they earn in one week.

    c) Suppose Christine worked 9 hours last week. What was the total amount the girls earned last week?

15. Three songwriters worked together to write the songs for a new album. They each negotiated a different contract with the record company.

Songwriter	Fixed Rate ($)	Royalty ($ for n albums sold)
James	5000	–
Alanna	2000	$3n$
Deirdre	1000	$5n$

    a) Find a simplified expression for the total amount the record company will pay the three songwriters.

    b) What is the total amount the record company will pay if the album sells 200 000 copies?