

## 2.3 Subtracting Polynomials

Date \_\_\_\_\_ Period \_\_\_\_\_

**Simplify each difference.**

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

2)  $(7n + 3n^2) - (8n^2 - 6n)$

3)  $(7m - 4) - (3 - 6m)$

4)  $(m^3 - 6m^4) - (2m^3 - 7m^4)$

5)  $(2x^4 + 7x^3) - (3x^3 + 7x - 3x^4)$

6)  $(3a^3 + 7a) - (6 - 5a^3 + 8a)$

7)  $(8m^2 + m^4 + 3) - (3m^3 - 8m^2 - 1)$

8)  $(2 - 6r^4 + 5r^2) - (7 - r^2 + 5r^4)$

**Simplify each expression.**

9)  $(x^2 + 6x^4) - (-x^2 - 7 - 7x^4)$

10)  $(-6b^3 - 7b^2) + (-b^3 + 8b + 3b^2)$

11)  $(-3 + 4n^3) + (n + 4n^3 + 1)$

12)  $(8p^4 + 7) - (7 + 2p^4 + 8p^3)$

13)  $(1 - 8k^2 - 6k) - (7k - 1 - 5k^2)$

14)  $(1 + v^2 - v^3) + (4v^3 - 6 - 7v^2)$

- 15) A bicycle company produces  $y$  bicycles at a cost represented by the polynomial  $y^2 + 10y + 100000$ . The revenue for  $y$  bicycles is represented by  $2y^2 + 10y + 500$ . Find a polynomial that represents the company's profit. If the company only has enough materials to make 300 bicycles, should it make the bicycles?

- 16) Hallie subtracted a quantity from the polynomial  $3y^2 + 8y - 16$  and produced the expression  $y^2 - 4$ . What quantity did Hallie subtract? Explain how you got your answer.