

## Lesson 4.1 ~ Multiplication Properties of Exponents

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

**Simplify.**

1.  $x^2x^4$

2.  $(y^6)^3$

3.  $(p \cdot q)^7$

4.  $(5x^3)^2$

5.  $(w^4yz^5)(w^2y^6z)$

6.  $(3a^5b)(4a^4b^7)$

7.  $(3gh^4)^3$

8.  $(-8x^3y^6)(5x^4y^9)$

9.  $(0.1f^3d^8)^2$

10. A farmer wants to fence in a square pasture for his sheep. The length of one side of the pasture is represented by  $m^2x^3$ . What term represents the area of the pasture?

**Simplify.**

11.  $(2x^4)^3(5x^7)^2$

12.  $(-3y^2w^3)^4(2y^6)^5$

13.  $4p^5 \cdot (4p^5)^3$

14.  $(4a^9b)^2(5a^6b^7)^3$

15. The length of a rectangle is four times its width. If its width is  $x^5$  units, what is the area of the rectangle?

16. The width of a rectangular prism is six times its length. The height is five times its length. If its length is  $m$  units, what is the volume of the prism?