

7-4

Reteaching (continued)

Division Properties of Exponents

Simplify each expression.

1. $\frac{7^5}{7^2} \cdot 7^3$

2. $\frac{3^9}{3^2} \cdot 3^7$

3. $\frac{5^2}{5} \cdot 5$

4. $\frac{4^z}{4^4} \cdot 4^{z-4}$

5. $\frac{m^{\frac{3}{4}}}{m^{\frac{1}{2}}} \cdot m^{\frac{1}{4}}$

6. $\frac{p^6}{p^5} \cdot p$

7. $\frac{r^3}{r} \cdot r^2$

8. $\frac{x^5y^4}{x^3y} \cdot x^2y^3$

9. $\frac{a^3}{a^5} \cdot \frac{1}{a^2}$

10. $\frac{10x^5}{15x^2} \cdot \frac{2}{3}x^3$

11. Use properties of exponents to show that $a^0 = 1$. (*Hint*: Write the quotient of two powers that have a as their base and have the same exponent.)

Because $\frac{a^5}{a^5} = 1$, $\frac{a^5}{a^5} = a^{5-5} = a^0 = 1$

12. Compare multiplying and dividing powers with the same base.

To multiply powers of the same base, you add the exponents. To divide powers of the same base, you subtract the exponents.