

7-2

Practice

Form G

Multiplying Powers With the Same Base

Rewrite each expression using each base only once.

$$1. 4^5 \cdot 4^3 \\ = 4^8$$

$$2. 2^4 \cdot 2^6 \cdot 2^2 \\ = 2^{12}$$

$$3. 5^6 \cdot 5^{-2} \cdot 5^{-1} \\ = 5^3$$

$$4. 10^{-4} \cdot 10^4 \cdot 10^2 \\ = 10^2$$

$$5. 7^9 \cdot 7^3 \cdot 7^{-10} \\ = 7^2$$

$$6. 9^2 \cdot 9^{-8} \cdot 9^6 \\ = 9^0 \\ = 1$$

Simplify each expression.

$$7. z^8 z^5 \\ = z^{13}$$

$$8. -4k^{-3} \cdot 6k^4 \\ = -24k$$

$$9. (-5b^3)(-3b^6) \\ = 15b^9$$

$$10. (13x^{-8})(3x^{10}) \\ = 39x^2$$

$$11. (-2h^5)(4h^{-3}) \\ = -8h^2$$

$$12. -8n \cdot 11n^9 \\ = -88n^{10}$$

$$13. mn^2 \cdot m^2n^{-4} \cdot mn^{-1} \\ = m^4 n^{-3} \\ = \frac{m^4}{n^3}$$

$$14. (6a^3b^{-2})(-4ab^{-8}) \\ = -24a^4b^{-10} \\ = \frac{-24a^4}{b^{10}}$$

$$15. (12mn)(-m^3n^{-2}p^5)(2m) \\ = -24m^5n^{-1}p^5 \\ = \frac{-24m^5p^5}{n}$$

Complete each equation.

$$16. 9^{-2} \cdot 9^4 = 9^{\square} \\ 9^2$$

$$17. 5^{\square} \cdot 5^3 = 5^2 \\ 5^{-1}$$

$$18. 2^8 \cdot 2^{\square} = 2^{-2} \\ 2^{-10}$$