

7-3

Practice

Form G

More Multiplication Properties of Exponents

Simplify each expression.

$$1) (z^5)^3 \\ = z^{15}$$

$$2) (m^4)^{10} \\ = m^{40}$$

$$3) (x^7)^{-2} \\ = x^{-14} \\ = \frac{1}{x^{14}}$$

$$4) b(b^{-8})^{-3} \\ = b(b^{24}) \\ = b^{25}$$

$$5) h^2(h^7)^0 \\ = h^2(1) \\ = h^2$$

$$6) (x^6)^2(y^3)^0 \\ = (x^{12})(1) \\ = x^{12}$$

$$7) (g^5)^{-5}(g^6)^{-2} \\ = (g^{-25})(g^{-12}) \\ = g^{-37} \\ = \frac{1}{g^{37}}$$

$$8) (6a)^4 \\ = 6^4 a^4 \\ = 1296 a^4$$

$$9) (5f)^{-3} \\ = \frac{1}{(5f)^3} \\ = \frac{1}{125 f^3}$$

$$10) (10m^3)^{-2} \\ = \frac{1}{(10m^3)^2} \\ = \frac{1}{100 m^6}$$

$$11) (6j^2)^{-3} \\ = 6^{-3} j^6 \\ = \frac{j^6}{6^3} \\ = \frac{j^6}{216}$$

$$12) (9d^{10})^{-2} \\ = \frac{1}{(9d^{10})^2} \\ = \frac{1}{81 d^{20}}$$

$$13) (gh)^0 \\ = 1$$

$$14) (4a^3)^2 a^5 \\ = (16a^6) a^5 \\ = 16a^{11}$$

$$15) (xy^2)(xy^2)^{-1} \\ = \frac{xy^2}{xy^2} \\ = 1$$

$$16) z(y^{-5}z^7)^{-1}y^{-5} \\ = z y^5 z^{-7} y^{-5} \\ = z^{-6} y^0 \\ = \frac{1}{z^6}$$