10.3 Quotient of Powers Property p. 424

* to divide powers with the same base, subtract their exponents

$$\frac{a^m}{a^n} = a^{m-n} \qquad a \neq 0$$

① Dividing Powers w/ the same base: (write w/ exponent)

a) $\frac{2^6}{2^4} = 2^{6-4} = \boxed{2^2}$

b) $\frac{(-7)^9}{(-7)^3} = \boxed{(-7)^6}$

c) $\frac{h^7}{h^6} = \boxed{h}$

d) $\frac{4.2^6}{4.2^5} = \boxed{4.2}$

e) $\frac{x^8}{x^3} = \boxed{x^5}$

② Simplifying Expressions: (write answer as a power)

a) $\frac{3^4 \cdot 3^2}{3^3} = \frac{3^6}{3^3} = \boxed{3^3}$

b) $\frac{5^6 \cdot 5^2}{5^4} = \frac{5^8}{5^4} = \boxed{5^4}$

c) $\frac{z^6}{z^2} \cdot \frac{z^8}{z^5} = z^4 \cdot z^3 = \boxed{z^7}$

d) $\frac{a^{10}}{a^6} \cdot \frac{a^7}{a^4} = \frac{a^{17}}{a^{10}} = \boxed{a^7}$

e) $\frac{2^{15}}{2^3 \cdot 2^5} = \frac{2^{15}}{2^8} = \boxed{2^7}$