

Math 70 Quiz #9

1. (a) $\frac{x^{10}}{x^3} = x^7$ (The exponent in the numerator is larger.)
- (b) $\frac{-4y^2}{2y^8} = \frac{-2}{y^6}$ (since $\frac{-4}{2} = -2$ and $\frac{y^2}{y^8} = \frac{1}{y^6}$ ← Exponent in denominator is larger)
- (c) $\frac{5a^2b^3}{15ab^3} = \frac{a}{3}$ (since $\frac{5}{15} = \frac{1}{3}$, $\frac{a^2}{a} = a$, and $\frac{b^3}{b^3} = 1$)
- (d) $(x^3)^4 = x^{3 \cdot 4} = x^{12}$
- (e) $(9x^5)^2 = 9^2(x^5)^2 = 81x^{5 \cdot 2} = 81x^{10}$
- (f) $\left(\frac{xy}{2}\right)^3 = \frac{(xy)^3}{2^3} = \frac{x^3y^3}{8}$
- (g) $6^{-2} = \frac{1}{6^2} = \frac{1}{36}$
- (h) $x^{-3}y = \frac{y}{x^3}$