

# 9/13 1.6 Exponents

Ex1:

$$\left( \frac{x^{14} (x^5)^{-9}}{(2x^7)^2} \right)^{\frac{1}{7}} = \left( \frac{x^{14} (x^{-45})}{(2x^7)^2} \right)^{-\frac{1}{7}}$$

$$\left( \frac{x^{-31}}{(2x^7)^2} \right)^{-\frac{1}{7}}$$

-31-14

$$\left( \frac{1x^{-31}}{4x^{14}} \right)^{-\frac{1}{7}}$$

$$\left( \frac{x^{-45}}{4} \right)^{-\frac{1}{7}}$$

$$= \frac{x^{\frac{45}{7}}}{4^{-\frac{1}{7}}} = 4^{\frac{1}{7}} x^{\frac{45}{7}}$$

Ex2:

$$\frac{(3m^3)^2 (mn)^1}{(25m^{14}n^{-4})^{\frac{1}{2}}} = \frac{(9m^6)(1m^{-1}n^{-1})}{(25m^{14}n^{-4})^{\frac{1}{2}}}$$

$$25^{\frac{1}{2}} = \sqrt{25} = 5 = \frac{9m^5n^{-1}}{5m^7n^{-2}}$$

$$-1 + 2 = \frac{9}{5} m^{\textcircled{-2}} n^1 = \frac{9n}{5m^2}$$

Ex3:

$$\left[ \left( \frac{1}{4} x^{-4} y \right)^{-2} \left( -\frac{1}{2} x y^5 \right)^2 \right]^3 = \left[ \left( \left( \frac{1}{4} \right)^{-2} x^8 y^{-2} \right) \left( \left( -\frac{1}{2} \right)^2 x^2 y^{10} \right) \right]^3$$
$$\left( \frac{1}{4} \right)^{-2} = (4)^2 = 16$$
$$\left( -\frac{1}{2} \right)^2 = \frac{1}{4}$$
$$= \left[ (16 x^8 y^{-2}) \left( \frac{1}{4} x^2 y^{10} \right) \right]^3$$
$$= (4 x^{10} y^8)^3$$
$$= 64 x^{30} y^{24}$$

HW pg 36 95-98 all, pg 61 29-52 all, pg 63-64 97-100 all