Mathematics 11U

4.4 – Algebraic Expressions

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1. $\dfrac{(n^{-4})(n^{-6})}{(n^{-2})^{7}}$

$= \dfrac{n^{-10}}{n^{-14}}$

$= n^{-10 - -14}$

$= n^{4}$

2. $\dfrac{(-2x^{5})^{3}}{8x^{10}}$

$= \dfrac{-8x^{15}}{8x^{10}}$

$= -x^{5}$

$$\frac{(4r^{-6})(-2r^2)^5}{(-2r)^4}$$

$$= \frac{(4r^{-6})(-32r^{10})}{16r^4}$$

$$= \frac{-128r^4}{16r^4}$$

$$= -8$$

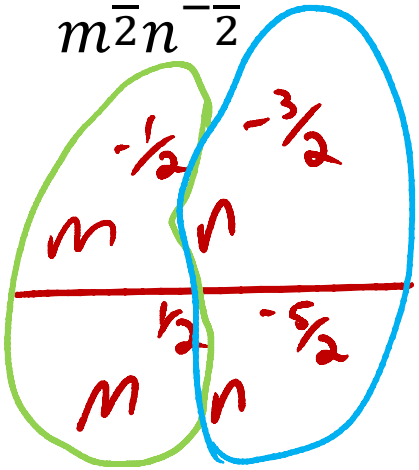
$$\frac{\sqrt[6]{(8x^6)^2}}{\sqrt[4]{625x^8}}$$

$$= \frac{\sqrt[6]{64x^{12/6}}}{\sqrt[4]{625x^{8/4}}}$$

$$= \frac{2x^2}{5x^2}$$

$$= \frac{2}{5}$$

$$\frac{(mn^3)^{-\frac{1}{2}}}{m^{\frac{1}{2}}n^{-\frac{5}{2}}}$$



$-\frac{1}{2}-\frac{1}{2}$ $-\frac{3}{2}+\frac{5}{2}$

$= m \quad n$

$= \frac{m^{-1} \; n^{2/2}}{1} = \frac{n^1}{m^1}$

$$\sqrt{\frac{9b^3(ab)^2}{(a^2b^3)^3}}$$

$$= \sqrt{\frac{9b^3(a^2b^2)}{a^6b^9}}$$

$$= \sqrt{\frac{9a^2b^5}{a^6b^9}}$$

$$= \sqrt{\frac{9}{a^4b^4}} = \frac{3}{a^2b^2}$$