4.4

$$\frac{(n^{-4})n^{-6}}{(n^{-2})^7}$$

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

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

$$= n^4$$

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

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

$$= -x^5$$

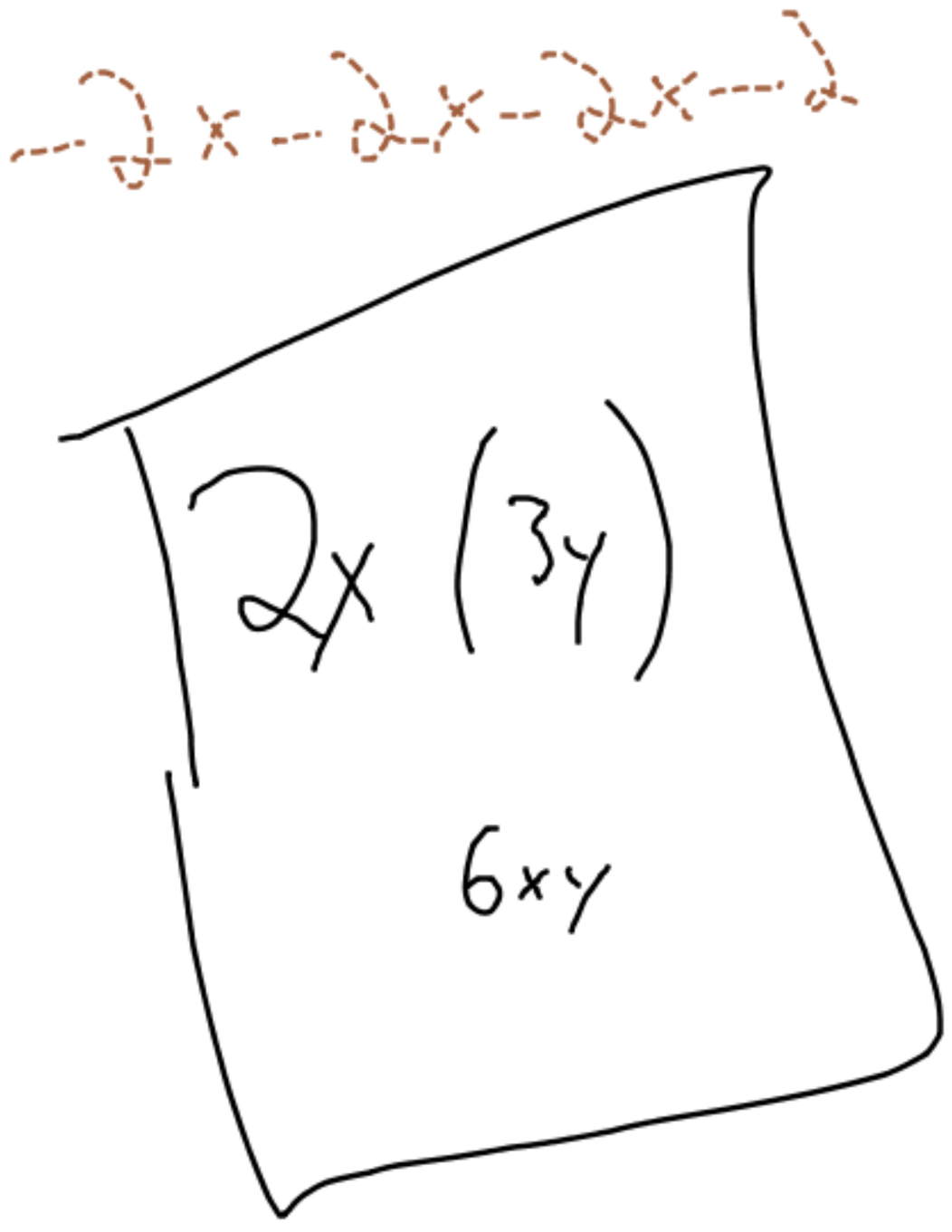
$$(-2)^3 = -2^3$$

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

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

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

$$= -8$$



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

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

$$64^{1/6} = 2$$

$$625^{1/4} = 5$$

$$= \frac{2x^{12/6}}{5x^{8/4}}$$

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

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

$= m^{-1/2} n^{-3/2} \Big/ m^{1/2} n^{-5/2}$

$-1/2 - 1/2 \quad -3/2 + 5/2$

$= m \quad n$

$= m^{-1} n^{1}$

$= \frac{n}{m}$

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

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

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

$$= \sqrt{9a^{-4}b^{-4}}$$

$$= 3a^{-2}b^{-2}$$

$$= \frac{3}{a^2b^2}$$