Name: _____ Date: _____

Learning Goal 5.2	Use exponent laws to evaluate expression with positive and negative rational exponents.

Write each power as a radical, then simplify if possible.

a. $35^{2/3}$ b. $32^{3/2}$ c. $(-32)^{2/5}$

d. $400^{1.5}$ e. $(-125)^{1/3}$ f. $\left(\frac{8}{125}\right)^{2/3}$

g. $(-1000)^{-2/3}$ h. $\left(\frac{1}{4}\right)^{-1/2}$ i. $(-0.0008)^{-4/3}$

Write each radical as a fractional power with the smallest possible base.

a. $\sqrt[3]{81}$ b. $\sqrt[4]{32}$ c. $\left(\sqrt{10}\right)^{3}$

d. $\left(\sqrt[3]{-10}\right)^{2}$ e. $\left(\frac{1}{2\sqrt{2}}\right)^{2}$ f. $\left(5\sqrt[3]{5}\right)^{-3}$

Example Paleontologists use measurements from fossilized dinosaur tracks and the formula

$$v = 0.155s^{5/3}f^{-7/6}$$

to estimate the speed at which the dinosaur travelled. In the formula, *v* is the speed in metres per second, *s* is the distance between successive footprints of the same foot, and *f* is the foot length in metres. If *s* = 1.5 m and *f* = 0.3 m, find the estimate the speed of the dinosaur.