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The deadline for all homework assignments is the one specified in Archie before 11:59 pm. As discussed in class, It must be correctly uploaded in order to be graded. Show all your work and justifications.

**For Exercises 47–56, simplify each expression. Assume that all variable expressions represent positive real numbers.**

47.  $\frac{a^{2/3}a^{5/3}}{a^{1/3}}$

48.  $\frac{y^{7/5}y^{4/5}}{y^{1/5}}$

49.  $\frac{3w^{-2/3}}{y^{-1/3}}$

50.  $\frac{8d^{-5/7}}{c^{-3/4}}$

51.  $(16x^{-8}y^{1/5})^{3/4}$

52.  $(125a^6b^{-7/5})^{1/3}$

53.  $\left(\frac{2m^{2/3}}{n^{3/4}}\right)^{12}\left(\frac{n^{1/5}}{2m^{1/2}}\right)^{10}$

54.  $\left(\frac{3x^{1/2}}{y^{3/8}}\right)^4\left(\frac{y^{1/2}}{3x^{4/3}}\right)^3$

56.  $\left(\frac{c^2}{c-d}\right)^{-2}\left(\frac{c^2}{c-d}\right)^{3/2}$

55.  $\left(\frac{m^2}{m+n}\right)^{-1}\left(\frac{m^2}{m+n}\right)^{1/2}$