1. Convert each number between scientific notation and standard notation.

(a) \(2.1 \times 10^{-8}\) to standard notation.

\[0.000000021\]

(b) \(3100000000\) to scientific notation.

\[3.1 \times 10^9\]

2. Simplify the following expression completely. Assume that all variables are positive.

\[
\left(\frac{4x^2y^{-3}}{6x^{-1}y^5}\right)^{-2} = \left(\frac{2x^{2-(-1)}}{3y^{5-(-3)}}\right)^{-2} = \left(\frac{2x^3}{3y^8}\right)^{-2} = \left(\frac{3y^8}{2x^3}\right)^2 = \left(\frac{9y^{16}}{4x^6}\right)
\]