Section A.1
Section Objectives:

- Work with positive, negative and rational (fraction) exponents.
- Know the algebraic properties of exponents.
- Use rationalization to simplify expressions.

Practice Problems

1. Simplify the following expressions:
   (a) 2^3
   (b) $\sqrt[5]{32}$
   (c) $\dfrac{x^2}{x^5}$
   (d) $(y^3)^5$
   (e) $\left(\dfrac{x^2y^3}{x^3z}\right)^{-3}$
   (f) $\sqrt{72a^4b^3c^5}$
2. Rewrite the expression using postivie or negative rational exponents instead of radicals and division.
   (a) $\sqrt[4]{x^3} + \dfrac{\sqrt{x^3}}{y^4}$
   (b) $\dfrac{\sqrt{(x^2+1)^3}}{(x^2+1)^4}$
3. Rationalize the denominator:
   (a) $\dfrac{1}{\sqrt{3}}$
   (b) $\dfrac{1}{4+\sqrt{2}}$
4. Rationalize the numerator and simplify:

   $$\frac{\sqrt{x+1}-2}{x-3}$$

More Practice from Textbook A.1: You should do as many problems from each set (1-64, 65-72, 73-84, 85-92, 93-96), as needed until you are comfortable with these techniques.