Math 19: HW #1

Sec 1.1: #26

Sec 1.3: #10, #22(a), #38

Sec 1.4: #4, #12, #30

Sec 1.5: #6, #18

Sec 1.6: #18

A1. Simplify the expression: \( \frac{\sqrt{a\sqrt{b}}}{\sqrt[3]{ab}} \)

A2. Find the domains of the following functions:
   (a) \( f(x) = \sqrt{3 - x} - \sqrt{x + 2} \)
   (b) \( g(x) = \frac{1}{\sqrt{x^2 - 5x}} \)
   (c) \( h(x) = \frac{x + 1}{e^{\cos x}} \)

A3. Sketch the graphs of the functions.
   (a) \( f(x) = 3 + \sqrt[3]{x - 1} \)
   (b) \( g(x) = -2^{-x} \)
   (c) \( h(x) = e^{\sqrt[3]{x}} \)

A4. Sketch the graph of \( k(x) = \begin{cases} 
x + 2 & \text{if } x \leq -1 \\
x^2 & \text{if } x > -1. 
\end{cases} \)