1. Let $f(x, y) = \sqrt{x^2 + y^2}$
   (a) Sketch the level curves for $z = 4, 2, 1, 0, -1, -2, -4$ on the same set of axes

   (b) Sketch the trace in the xz-plane

   (c) Sketch the graph $z = f(x, y)$ in three dimensions

   (d) Verify your sketch from (c) by graphing in Mathematica or WolframAlpha

2. Let $g(x, y) = x^2 - y^2$.

   Repeat (a) - (d) from #1

3. Consider the surface determined by the equation $x^2 + y^2 - z^2 = -1$

   Repeat (a) & (b) from #1, sketch the surface, and verify using Mathematica or WolframAlpha