1. Graph each of the equations twice. Your first graph of each should be in $\mathbb{R}^2$, and your second graph of each should be in $\mathbb{R}^3$.

    (a) $4x^2 + y^2 = 4$

    (b) $y = x^2$

    (c) $y = x$

    (d) $y = \ln x$

2. Sketch the graph in $\mathbb{R}^3$.

    (a) $y^2 + 9z^2 = 9$

    (b) $z = x^2$

    (c) $z = y + 1$

3. Use traces to sketch and identify the surface. Identify the surface by its proper name, and, if appropriate, along which axis the graph is centered.

    (a) $z = x^2 + y^2$

    (b) $x^2 + 4y^2 + z^2 = 4$

    (c) $4x^2 + 2y^2 - z^2 = 8$

    (d) $4 - 11x^2 - 11y^2 - 11z^2 = 0$

    (e) $y^2 - x^2 - z^2 = 0$

    (f) $x^2 - y^2 - z^2 = 16$

    (g) $y = 1 - x^2 - z^2$

    (h) $x + y^2 = 5$