1. Graph the $yz$-trace of the function
   \[ x^2 - 16y^2 + 4z^2 = 64 \]

2. Give an equation for the osculating plane to the vector-valued function
   \[ \mathbf{r}(t) = t^3 \mathbf{i} + t^2 \mathbf{j} + t \mathbf{k}, \]
   at $t = 1$

3. Graph the level $-1$, $0$, and $1$ curves for the function
   \[ f(x, y) = x^2 - 4y^2 \]

4. Let $f(x, y) = \ln(x - y^2)$
   (a) What is the domain $D$ of $f$?
   (b) What are the interior points of $D$?
   (c) What are the boundary points of $D$?
   (d) Is $D$ open, closed, both or neither?

5. Compute
   \[ \lim_{(x, y) \to (0, 0)} \frac{y}{\sqrt{x^2 - y^2}} \]
   or show that the limit does not exist.

6. Compute
   \[ \lim_{(x, y) \to (0, 0)} \frac{|xy|}{xy} \]
   or show that the limit does not exist.