1. Compute the indicated limit:

\[ \lim_{(x, y, z) \to (1,1,2)} \frac{e^{x + y - z}}{x - z} \]

2. Show that the indicated limit does not exist:

\[ \lim_{(x, y) \to (0,0)} \frac{x(\cos y - 1)}{x^3 + y^3} \]

3. Show that the indicated limit exists:

\[ \lim_{(x, y) \to (0,0)} \frac{x^2 y}{x^2 + y^2} \].
4. Determine all points at which the function $f(x, y) = \ln(3 - x^2 + y)$ is continuous.

5. Estimate the indicated limit numerically:
\[
\lim_{(x, y) \to (0,0)} \frac{3 \sin(xy^2)}{x^2y^2 + xy^2}.
\]

6. Use polar coordinates to find the indicated limit, if it exists (Note that $(x, y) \to (0,0)$ is equivalent to $r \to 0$):
\[
\lim_{(x, y) \to (0,0)} \frac{e^{x^2 + y^2} - 1}{x^2 + y^2}.
\]