The following limits can be verified using the Squeeze Theorem discussed in Section 14.2.

\[ \lim_{(x,y) \to (0,0)} \frac{x^4 y^2}{x^2 + y^4} = 0 \]

\[ \lim_{(x,y) \to (0,0)} \frac{\sin^2(x)}{\ln(y^2)} = 0 \]

\[ \lim_{(x,y) \to (0,0)} \frac{3x^2 + x^2 y + 3y^2}{x^2 + y^2} = 3 \]