427L: Limits of 2-variable functions (2/10/22)

Compute the limit, or explain why it does not exist:

1.

$$\lim_{(x,y)\to(0,0)} \frac{(x-y)^2}{x^2+y^2}$$

2.

$$\lim_{(x,y)\to(0,0)} \frac{x^3-y^3}{x^2+y^2}$$

3. (Harder:)

$$\lim_{(x,y)\to(0,0)} \frac{\sin(xy)}{xy}$$