

For each of these functions,
" classify it as continuous or discontinuous
at the given input point.

HW 19

Give evidence for your answers in the form
of graphs **or** tables of values.

$$\textcircled{1} \left[f(x, y) = \frac{x^2 y}{x^2 + y^2} \text{ if } (x, y) \neq (0, 0) \text{ else } 0 \right]$$

at input $(0, 0)$.

$$\textcircled{2} \left[g(x, y) = \frac{x^2 y}{(x-1)^2 + y^2} \text{ if } (x, y) \neq (1, 0) \text{ else } 0 \right] \text{ at } (1, 0).$$

$$\textcircled{3} \left[h(x, y) = \frac{x^2 y}{(x^2 + y^2)^{3/2}} \text{ if } (x, y) \neq (0, 0) \text{ else } 0 \right] \text{ at } (0, 0)$$

$$\textcircled{4} \left[k(x, y) = |x| |y| \text{ if } x \neq 0 \text{ else } 0 \right] \text{ at } (0, 0).$$