

Show all work clearly and in order, and circle your final answers.
Justify your answers algebraically whenever possible. Unjustified work may not receive full credit.

- 1.** (2 points) If the following limit exists, compute it. If it does not exist, explain why not:

$$\lim_{(x,y) \rightarrow (4,5)} \frac{3 - \sqrt{x+y}}{9 - x - y}.$$

- 2.** (3 points) Let $f(x, y, z, w, t) = [\sin(wt)]^{xyz}$. Compute $\frac{\partial^2 f}{\partial t \partial x}$ and f_{yw} .