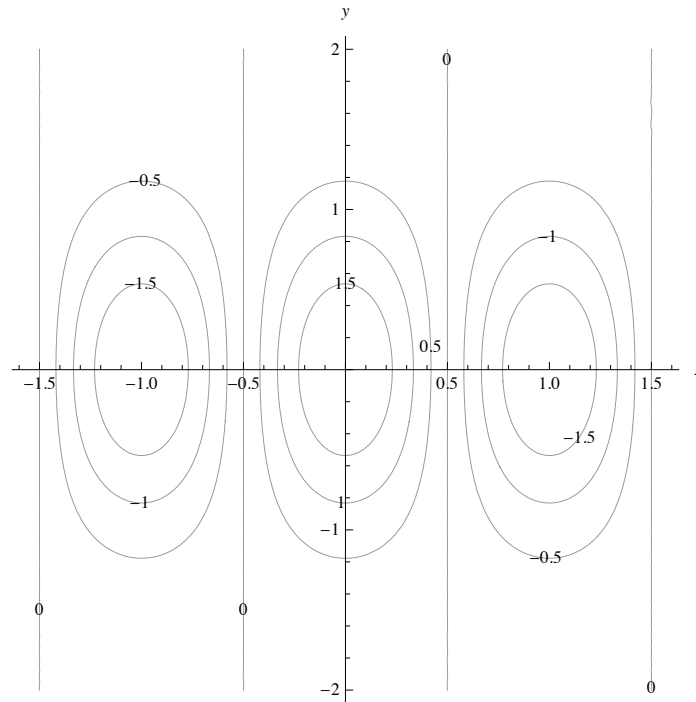


Name: _____

A contour diagram for a function $f(x, y)$ is shown below.

1. State whether each of the partial derivatives below is positive, negative, or zero:

(a) $f_x(1, 1)$

(b) $f_y(1, 1)$

2. Four students estimated the partial derivatives below. Which of their estimates are reasonable?

$$f_x(0.2, 0.6) \approx \quad -1.1 \quad \quad -0.75 \quad \quad 0.01 \quad \quad 3$$

$$f_y(0.2, 0.6) \approx \quad 1.25 \quad \quad 2.5 \quad \quad -1.2 \quad \quad -1.3$$

3. Estimate the position(s) and approximate value of the global maxima and minima on the region shown.