Quiz **Math 251:22-23-24** **10/28/2008**

Name _____

Suppose $f(x,y) = x^2 + 3y$. Label the points $P = (2,-1)$ and $Q = (-1,-2)$ on the axes provided below. Draw the level curves of the function f which go through the points P and Q on the axes provided below. Compute ∇f and find the value of the gradient at P and Q and also sketch these vectors on the axes provided below, with $\nabla f(P)$ starting at P and with $\nabla f(Q)$ starting at Q.