MATH **126** Quiz **Nov. 14** **Name:**

No books, notes or graphing calcuators. Please turn off your cell phones. Show ALL your work.

This quiz is TWO-SIDED!

(5) 1. Let $f(x,y) = \sqrt{x^2 - y}$

(a) Find and sketch the domain of f.

(b) What is the range of f?

(c) Sketch the level curves for f at 0, 1 and 2.

(5) 2.

(a) Find the velocity and position vectors of a particle moving with the constant acceleration given by the vector

$$\mathrm{a}(t) = (0, 0, -10)$$

with the initial velocity $\mathrm{v}(0) = (1, 1, -1)$ and initial position $\mathrm{r}(0) = (2, 3, 0)$.

(b) Find an equation of the osculating plane to the curve given by the position function that you found in (a) at the point $t = 1$.