**Lecture time: 11 am** **Quiz 2**

Fall 2013 **Your name:** _____

Math 0230 **Your TA's name:** _____

No calculators, no notes, no books. Show all your work (no work = no credit). Write neatly. Simplify your answers.

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1. [5 points] Use the method of cylindrical shells to find the volume generated by rotating the region bounded by the curves $y = \sqrt{x}$ and $y = x^2$ about the $y$-axis.

2. [5 points] A gate in an irrigation canal is in the form of a trapezoid 3 feet wide at the bottom, 5 feet wide at the top, with the height equal to 2 feet. It is placed vertically in the canal with the water extending to its top. Find the hydrostatic force in pounds on the gate. The weight density of water is $62.5 = 125/2$ lb/ft$^3$.

bonus problem [5 points extra] Find the exact length $L$ of the curve $y = \sqrt{3 - x^2}$ when $-\sqrt{3} \leq x \leq 0$. You may use ANY method to find the right answer.