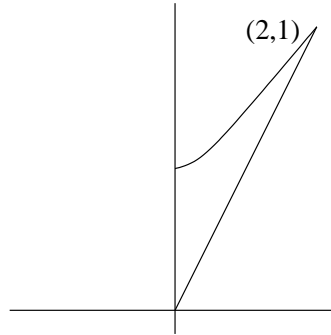


QUIZ 4

Your name _____

1. (10 pts) Use shells to find the volume of the solid of revolution obtained by revolving the region between the curve $y = \sqrt{3x^2 + 1}$, the line $y = 2x$, and the y -axis about the y -axis.



Problem 2 is on the back side.

2. (10 pts) A conical tank 3 feet high and 2 feet in diameter at the top is filled with oil that weighs 60 lb/ft^3 . How much work is needed to pump all the oil out the top? (Hint: if you put the origin at the bottom of the tank, the radius of the cross-section at height y is proportional to y .)

