Math 252, Fall 2020 Name: _____

Quiz 7 Due: Midnight, Oct. 12

In **30 minutes** do the following problems, **without help** from any references, computing devices, or people. Write your solutions on either a printout or blank paper. If you use blank paper, do the problems on **1 sheet of paper, in the order given.** Upload a pdf of your solutions to **Gradescope, by midnight.**

Show your work.

1. A dam is shaped like the region inside the parabola $y = 2x^2 - 200$ below the x-axis, with x, y measured in ft. Water is held behind the dam all the way up to its top. Find the total pressure the water exerts on the dam. (The weight density of water is 62.5 lbs/ft^3.)

2. Compute the center of mass $(\bar{x}, \bar{y})$ of the quarter disc that is bounded by $x^2 + y^2 = 25$ and lies in the first quadrant. (You may use symmetry and the formula for the area of a disc to reduce your effort.)