Please read the following instructions carefully:

- There are **two problems** in this quiz.
- The point distribution is given in the table below.
- Please write each solution on a separate page.
- This is a group quiz. Feel free to discuss the problems with your teammates. **You must, however, write and turn in your own work.**
- Upload your work to Gradescope.

Question:	1	2	Total
Points:	5	5	10

1. (5 points) A hemispherical swimming pool has a radius of 9 feet. The surface of the water is at height 5 feet (from the bottom). Set up, **but DO NOT EVALUATE**, the integral for the work required to pump all but 3 feet of water (from the bottom) to a platform 1 foot above the top of the pool. **Place the origin at the BOTTOM of the tank**. Assume the weight of water is 62.5 pounds per cubic foot.

2. (5 points) Find the length L of the curve parameterized by $x(t) = 1 - t^2$ and $y(t) = 1 + t^3$ for t in the interval $[0, 1]$.