

Quiz #4

Please print your name:

Problem 1. A conical container of radius 20 ft and height 40 ft is completely filled with brine (the tip of the cone is at the bottom). Brine weighs 75 lb/ft^3 .

Below, you are being asked to write down integrals. **Do not evaluate these integrals.**

- (a) Write down an integral for how much work it will take to pump the water to a level of 3 ft above the cone's rim.
- (b) Now, suppose instead that the container is initially only filled to a height of 30 ft. Again, write down an integral for how much work it will take to pump the water to a level of 3 ft above the cone's rim.