

## MA205

Board Sheet - 12 September 2007, Application Physics, Lesson 15

### Understanding Work on Fluids by doing BEER MATH

1. Work is still Force times Distance.
2. Now we need to find mass again and integrate over the distance.
3. We find the mass by remembering that mass is density times volume -  $m = \rho v$
4. So now we need to find the volume of the container we are moving fluid out of. Volume is length times width times height -  $v = lwh$ .

#### Beer Math:

- How much work is required to syphon beer out of a carboy that is 20" high and has a diameter of 10.5" with beer up to 13" in the carboy. Where this beer weighs 60 lbs per cubic foot.



- How much work does the CO<sub>2</sub> bottle do to dispense beer out of a keg that is 26" high and has an 8" diameter with beer up to 24". Where this beer weighs 60 lbs per cubic foot.

