

For full credit, you must clearly show all work, and upload the solutions as a PDF before 11:59 pm on the due date.

1. How much work is done when a hoist lifts a $200kg$ rock to a height of $3m$?

2. A force of $10lb$ is required to hold a spring stretched $4in$ beyond its natural length. How much work is done in stretching it from its natural length. How much work is done in stretching it from its natural length to $6in$ beyond its natural length.

3. A Spherical water tank, $24ft$ in diameter, sits atop of $60ft$ tower. The tank is filled by a hose attached to the bottom of the sphere. If a 1.5 horse power pump is used to deliver water upto the tank, how long will it take to fill the tank? (One horse power = $550ft - lb$ of work per second)