Problem of the Week #5

Assigned: 30 Sep 10, 1300

Due: 7 Oct 10, 1300

Thirey's Folly

In preparation for military operations, MAJ Thirey fills a 750-liter water trailer and then tows it up a 1.6-km hill at a constant speed of 25 km/h. Unfortunately, with his mind on integral calculus, he forgets to close the drain valve and the trailer leaks potable water into the road at a rate of 3.75 liter/sec during the assent. The water trailer has a mass of 364 kg when empty and the hill has a 7.9% grade. What is the work required to pull the leaking water trailer up the hill?

Email solutions to Christopher.marks@usma.edu with subject line: POTW.

Solutions can be emailed in the form of: an email (plain text) no attachment, a word document, a mathematica file, an excel workbook, or a scanned adobe file of your work.

If none of these options work for you, you may drop a hardcopy off at my office TH239C, just annotate the time of submission.