

Math 8
Fall 2019

Written Homework Day 9
Assigned Friday, October 4

Note: Standard (not preliminary) written homework is graded on your work and your explanations, not just on your answer.

Explanations are important for many reasons. Being able to communicate what you know shows a depth of understanding beyond that of being able to get the right answer to a problem. Doing the mental work of putting explanations into words helps create that depth of understanding. On exams, we will grade your work and not just your answers, so this is good practice for taking exams.

For all these reasons, be sure to: show all your work; explain your reasoning; use clear English; write neatly so all this effort does not go to waste.

Written homework is always due at 10:00 AM on the following Monday.

Recall that near the earth's surface, the force exerted by gravity on an object of mass m kilograms has magnitude mg (where g is the nearly constant acceleration of gravity near the earth's surface, approximately $9.8 \frac{m}{s^2}$) and the direction in which it acts is straight down.

Homework: A container weighing 5 kilograms, and containing 50 kilograms of material, is suspended by a 20 meter long chain weighing 1 kilogram from the edge of a platform. As the container and chain are pulled up onto the platform at a constant rate of speed, the material in the container leaks out at a constant rate of speed, so that the container reaches the platform just as the last bit of material leaks out. How much work is done in total? (This includes the work done to pull the chain up to the platform, to pull the container up to the platform, and to pull each bit of material in the container up to whatever height it reaches before leaking out.)