

152 Midterm 2 Extra credit: (20 points)

Let's work on a question similar to the one discussed in the test. A tractor is dragging a log upward over a cliff as shown. The mass of the tractor is still 700. kg and the mass of the log is 200. kg. The angle between the slope and the horizontal direction is 15 degrees, as shown. The tractor (and the log) was initially in rest. Now, the tractor driver started the engine to pull the log up. Assume the driving force from the engine is a constant 5000. N pushing the tractor forward. (you may ignore all other resistance. The pulley is massless.) What's the speed of the tractor after it travels for 10 meters?

