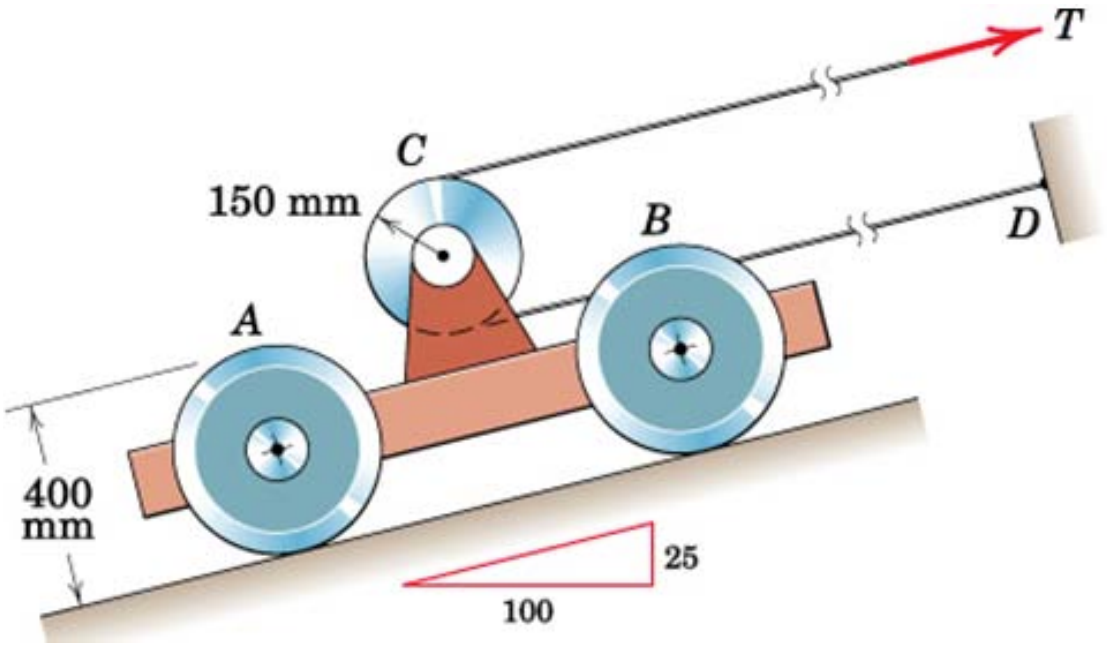
Prob7



The vehicle is used to transport supplies to and from the bottom of the 25-present grade. Each pair of wheels, one at A and the other at B, has a mass of 140 kg with a radius of gyration of 150 mm. The drum C has a mass of 40 kg and a radius of gyration of 100 mm. The total mass of the vehicle is 520 kg. The vehicle is released from rest with a restraining force T of 500 N in the control cable which passes around the drum and is secured at D. The wheels roll without slipping.

a)Calculate the inertia of wheel A about its centre in $kg.m^2$

b) Calculate the inertia of wheel C about its centre in kg.m2

c) Determine the initial acceleration a of the vehicle in m/s^2