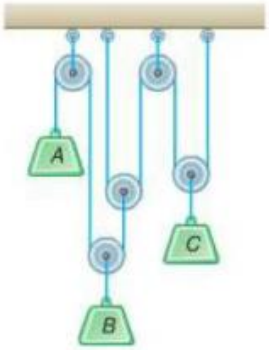
Homework of chapter 1

Date: Name: Student ID:

Submit time: May 24 2019

1. The acceleration of a particle is defined by the relation $a=kt^2$.(a)Knowing that v=-8ft/s when t=0 and v=+8ft/s when t=2s,determine the constant k.(b)Write the equation of motion, knowing also that x=0 when t=2s.

2. Block A starts from rest at t=0 and moves downward with a constant acceleration of $6in/s^2$. Knowing that block B moves up with a constant velocity of 3in/s, determine (a) the time when the velocity of block C is zero, (b) the corresponding position of block C.



3. A volleyball player serves the ball with an initial velocity v_0 of magnitude 13.40m/s at an angle of 20° with horizontal. Determine (a) if the ball will clear the top of the net, (b) how far from the net the ball will land.