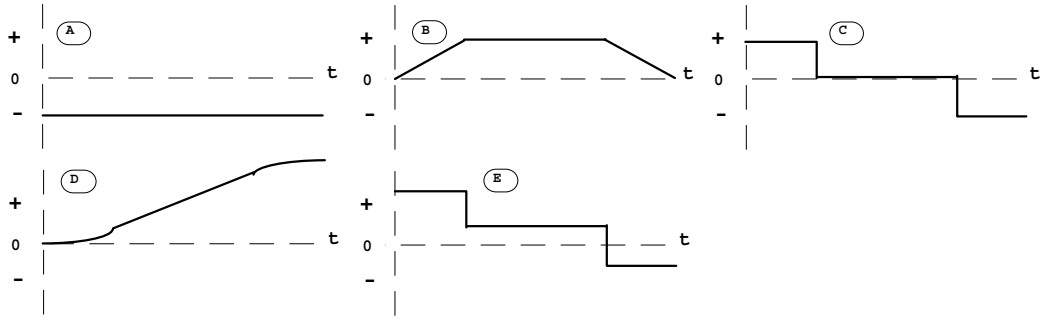
Quiz 6 Name:_____
Physics 2048C
Spring 2002 Date:_____ Group:_____

A worker is pushing a cart along the floor. At first, the worker has to push hard in order to get the cart moving. After a while, it is easier to push. Finally, the worker has to pull back on the cart in order to bring it to a stop before it hits the wall. The force exerted by the worker on the cart is purely horizontal. Take the direction the worker is going as positive.

1. Below are shown graphs of some of the physical variables of the problem. Match the graphs with the variables in the list below. You may use a graph more than once or not at all. Explain why you chose each graph. (Note: the time axes are to the same scale, but the "y axes" are not.)

   (a) friction force
   (b) force exerted by the worker
   (c) net force
   (d) acceleration
   (e) velocity.



2. Suppose while the worker notices that the push gets easier, a co-worker notes that the box is moving with constant speed. Draw a free-body diagram of the box. Be sure to label all the forces properly.