PART A MULTIPLE CHOICE

QUESTION A1

A force of 1.7 N is applied horizontally to a 1,577 g box that is at rest on a horizontal tabletop. The friction force between the box and table is 0.9 N. What is the magnitude of the acceleration (in m/s^2) of the box?

a) 0.001

b) 1.078

c) 0.507

d) 1.262

QUESTION A2

You are pushing a 737 g cereal box across a horizontal tabletop at a constant speed. The coefficient of kinetic friction, μ_k, between the box and the tabletop is 0.19. What is the magnitude of the force (in N) that you must apply to the box?

a) 7.22

b) 1.37

c) 0.14

d) 3.88

PART B SHORT ANSWER

1. A 3-kg fish can accelerate from rest to 7 m/s in 2.0 seconds.
    a. Determine the acceleration
    b. What is the net force?
    c. If the kinetic coefficient of friction is 0.2, what is the force required by the fish fins?