Quiz #8: Oscillations

**Problem 1** (2 points)
When an object executes simple harmonic motion, the acceleration at the ends of its path must be:

a) zero  
b) less than g  
c) greater than g  
d) suddenly changing in sign  
e) none of the above

**Problem 2** (3 points)
A tire swing hangs from a branch nearly to the ground. How could you estimate the height of the branch using only a stopwatch? Include an appropriate equation with your explanation.

**Problem 3** (5 points)
An object of mass 0.50 kg is connected to a horizontal spring. The object is pulled 25 cm and released from rest. The object then oscillates about its equilibrium position with a period of 1.75 s.

a) What is the spring constant of the spring?

b) What is the object’s maximum speed?

c) Write an equation for the position as a function of time (including the phase constant).