

**Names:**

**Student IDs:**

### **QUIZ 32: PENDULUMS AND OSCILLATION**

**INSTRUCTIONS:** Form groups of two and solve the following problem together. Make sure to show all your work in order to get full credit for the problem. Both of you will share the points for the solution equally. The maximum points each of you can get is 20 points, so the problem is worth a maximum of 40 points.

**PROBLEM:** A bucket full of water is suspended with a rope from a stationary point. The bucket is taken out of equilibrium and let to oscillate. A small hole on the bottom of the bucket lets water leak out with time. How is the time period affected as the amount of water in the bucket diminishes to zero?