

Name \_\_\_\_\_

PHY2048C, Practice Quiz 6

**A-** Read all the quiz once, or twice, before beginning to write. Make sure to comprehend all questions and start with those you feel most confident in.

**B –** Be clear and concise. There are no extra points for being verbose or writing extra.

**C –**Only use the white pages that I will provide. You have 50 minutes to answer the quiz.

---

**Problem 1**

A mass  $m$ , is attached to a wire of linear density  $5.6 \text{ g/m}$ , and the other end of the wire run over a pulley and tied to a wall as shown in Figure 1. The speed of transverse waves on the horizontal section of wire is observed to be  $20 \text{ m/s}$ . If a second mass  $m$ , is added to the first, the wave speed increases to  $45 \text{ m/s}$ . Find the second mass. Assume the string does not stretch appreciably.

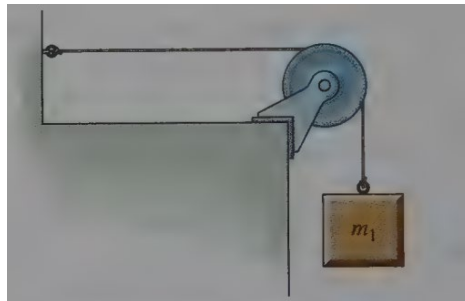


Figure 1

**Problem 2**

What variable or quantity oscillate in a sound wave? How does it oscillate?

**Problem 3**

The water level in a large tank is maintained at height  $H$  above the surrounding level terrain. A rounded orifice placed in the side of the tank discharges a horizontal jet. Neglecting friction, determine the height at which the orifice should be placed so the water strikes the ground at the maximum horizontal distance from the tank.

