

Worksheet: Physical quantities and measurements

Name: _____ Group name: _____

In this lab you will measure a number of things within the classroom and outside. Make use of the prelab reading and media/references to familiarize yourself with the physical principles and quantities related to measuring distance, area and volume, time and mass/weight. Make use of any of the measuring devices you see fit – meter stick, tape measure, scale, stopwatch. Please use **SI units** unless otherwise noted!

1. Suppose you're at the gas station and you just filled your tank. The pump shows "**11.008 gal**" and in small font below it says "Maximum error: 0.03 gal per gallon pumped". What did the pump measure?

- Physical quantity: _____
- Physical unit: _____
- Value/measurement: _____
- Accuracy: within _____

2. What is the **volume** of our lecture room "268 Weiser"?

- Physical quantity: _____
- Physical unit: _____
- Value/measurement: _____
- How did you determine the volume? (briefly)

- Think about how accurate your measurement might be. What "errors" did you make?

3. Determine the height of the Weiser high-rise (the one with the upside-down “L” of windows)?

- Physical quantity: _____
- Physical unit: _____
- Value/measurement: _____
- How did you determine the height? (briefly)

- Think about how accurate your measurement might be. What “errors” did you make?

- Accuracy: within _____

4. How long does it take a penny to drop **2 m**?

- Physical quantity: _____
- Physical unit: _____
- Value/measurement: _____
- Accuracy: within _____

5. What is the mass of a gallon of water?

- Physical quantity: _____
- Physical unit: _____
- Value/measurement: _____
- Accuracy: within _____
- What is the corresponding density (mass per unit of volume)?