**Formula: Experimental - Theoretical X 100**

 **Theoretical**

* Experimental = Values obtained from the lab.
* Theoretical = Values obtained from some authority -> book, table, list, official, etc.

(+) A positive percent error indicates your experimental values are \_\_\_\_\_\_\_\_\_\_\_\_\_\_ than the theoretical values.

(-) A negative percent error indicates your experimental values are \_\_\_\_\_\_\_\_\_\_\_\_\_\_ than the theoretical values.

Determine the percentage error in the following problems. Show all your work!

1. Experimental Value: 1.24 g

 Theoretical Value: 1.30 g

2. At a track meet, you time a friend running 100 m in 11.00 seconds. The officials time her at 10.67 seconds. What is your percentage error? (hint: think about which tool will give a more accurate time)

3. A standard 20.00 g mass is used to check the accuracy of a laboratory balance. The balance indicates a mass of 19.81 g when a standard mass is measured. What is the percent error of this measurement?

4. In 1.000 hour, as measured by a very accurate chronometer, a wristwatch measured an elapsed time of 1 hour and 12 seconds. What is the percent error in the time measured by the wristwatch?

(hint: does 1.12 hr = 1 hr 12 seconds??)

5. The mass of a certain chemical was determined by a very precise balance to be 1.4200 g. The same mass of a chemical was measured on a less precise balance and found to be 1.43 g. What is the percent error for the less precise balance?

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