Calculating Error & Percent Error

$$Error = |Measured\ Value - Accepted\ Value|$$

$$Percent\ Error = \frac{Error}{Accepted\ Value} * 100$$

A police officer uses a radar gun to clock a passing Ferrari at 131 miles per hour (mph). The Ferrari was really speeding at 127 mph. Calculate the error in the officer's measurement.

Calculate the percent error in the officer's measurement of the Ferrari's speed .

Two people, Reginald and Dagmar, measure their weight in the morning by using typical bathroom scales, instruments that are famously unreliable. The scale reports that Reginald weighs 237 pounds, though he actually weighs 256 pounds. Dagmar's scale reports her weight as 117 pounds, though she really weighs 129 pounds. Whose measurement incurred the greater error? Whose incurred a greater percent error?

Two jewelers were asked to measure the mass of a gold nugget. The true mass of the nugget was 0.856 grams (g). Each jeweler took three measurements. The average of the three measurements was reported as the "official" measurement with the following results:

Jeweler A: 0.863g, 0.869g, 0.859g

Jeweler B: 0.875g, 0.834g, 0.858g

Which jeweler's official measurement was more accurate? Which jeweler's measurements were more precise? In each case, what was the error and percent error in the official measurement?