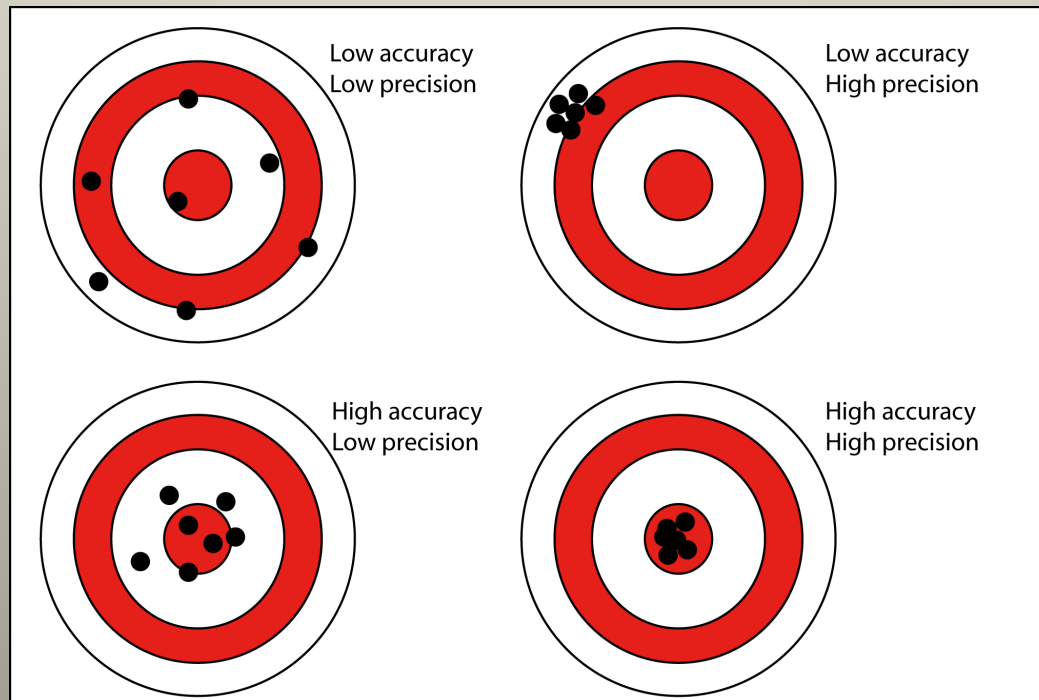


# Scientific Measurement: Precision, Accuracy & Resolution



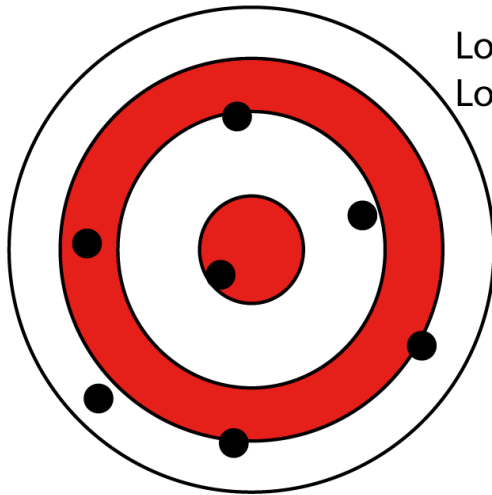
- Precision: how close together repeated measurements are



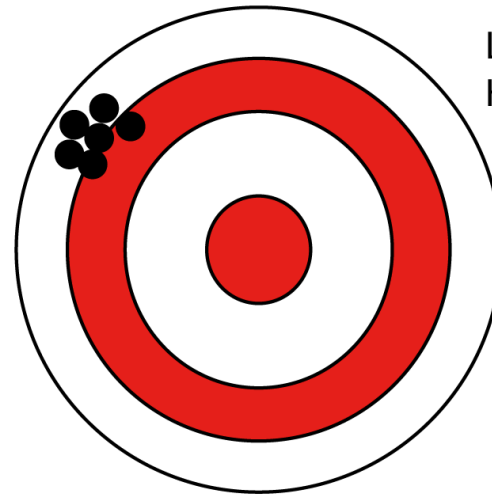
- Accuracy: how close a measurement is to an accepted or true value



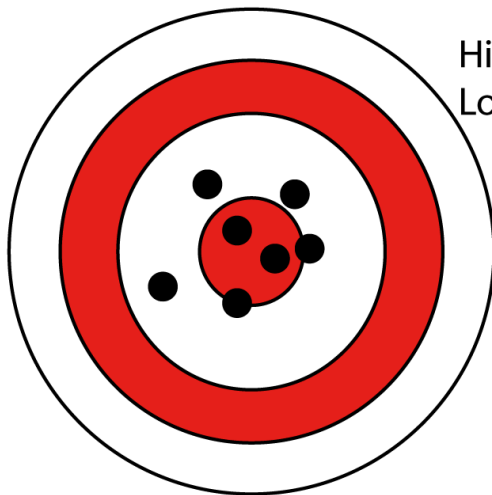
- Goal: measurements are both precise and accurate



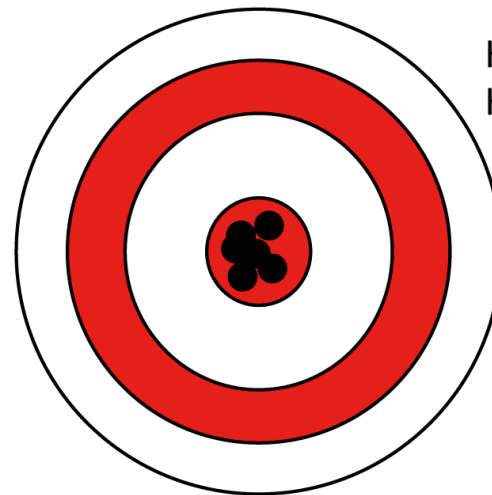
Low accuracy  
Low precision



Low accuracy  
High precision



High accuracy  
Low precision



High accuracy  
High precision

- Resolution: smallest interval that can be measured

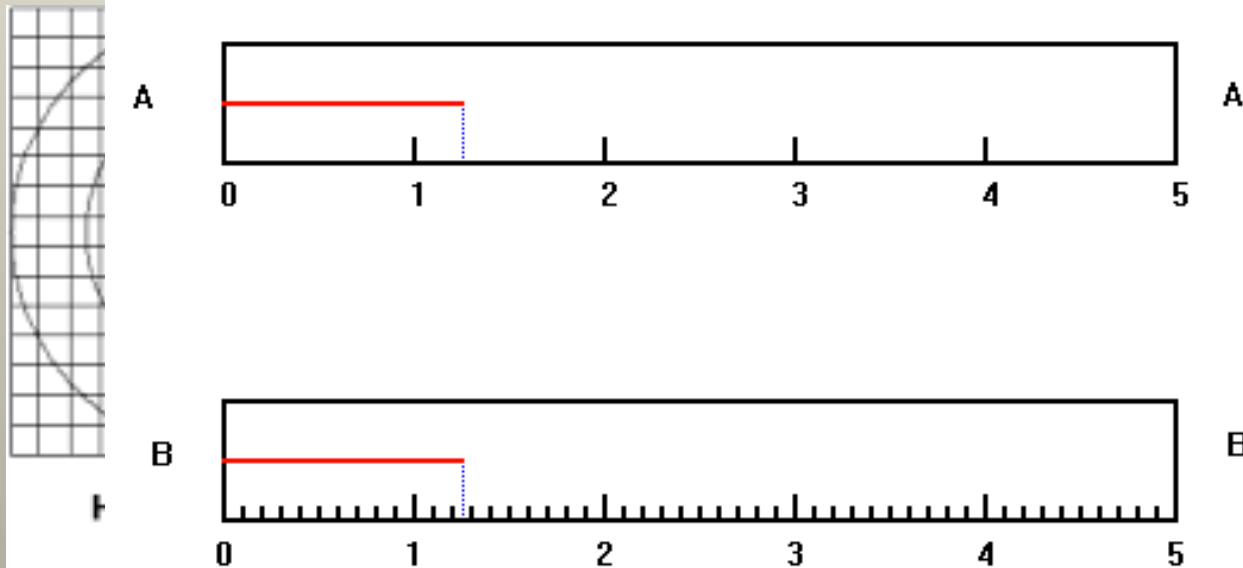


Figure 1. When ruler A is used to measure the length of the wire (red line) the length might be reported as 1.2 m, where the 2 has been estimated. When ruler B is used to measure that same wire, the 2 is no longer estimated, but now known for certain. Now the next digit can be estimated. We might report the length as 1.25 m, where the 5 has been estimated. In general, we will report our measurements one decimal place beyond the instrument's calibration.