It's Ain't Over Till It's Over!

On January 31, 2005 Randolph-Macon College (RMC) was playing Guilford College in basketball at Randolph-Macon in Ashland, Virginia. The teams are tied 88-88 with just a fraction of a second in overtime. RMC in yellow sinks a free throw to win the game (at least they thought they won). The second free throw is missed. Jordan Snipes from Guilford (in purple) rebounds the ball and gets a shot off just milliseconds before the buzzer. The rest is history.

How hard is this?

Consider the accuracy of the shot by Snipes. If he released the ball at an angle $\theta = 35°$ to the horizontal and from an initial height above the floor $y_0 = 2.4\ m$, then how accurately must he judge the speed of the ball at launch? Some useful parameters are below.

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Horizontal distance to center of basket:	22 m
Basket height:	3.10 m
Basket diameter:	0.46 m
Ball diameter:	0.239 m

Get out of the way

The trebuchet at Warwick Castle in the UK is home to one of the world's largest working siege engines. It takes eight men half an hour to load and release. On 21 August 2006, the trebuchet claimed the record as the most powerful siege engine of its type when it launched a projectile weighing 13 kilograms (29 lb) at a speed of 54 m/s (121 mph). If the launch angle is $\theta = 30°$, then how far does the projectile go before it lands? Assume there is no air friction and the ground is flat.
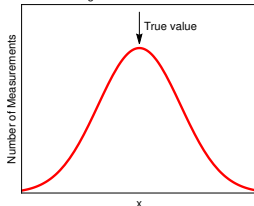
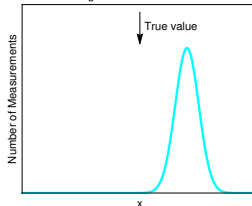Average and Standard Deviation
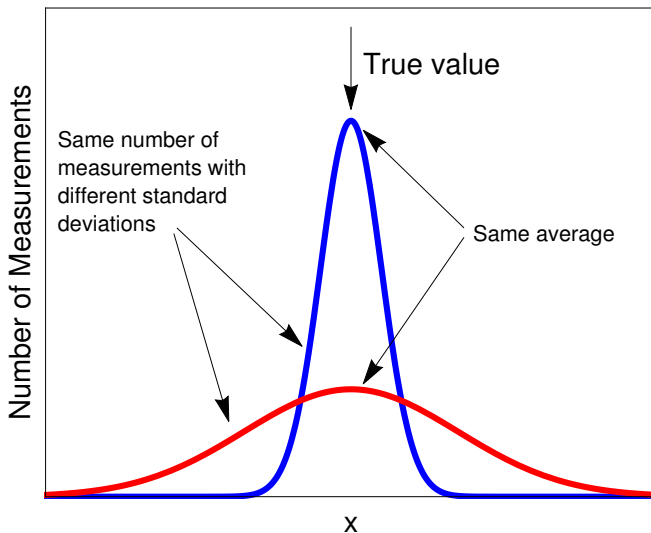
Precision versus Accuracy
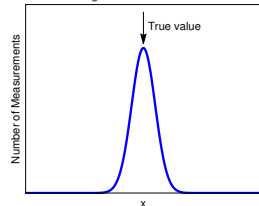

Not precise.
Average and Standard Deviation

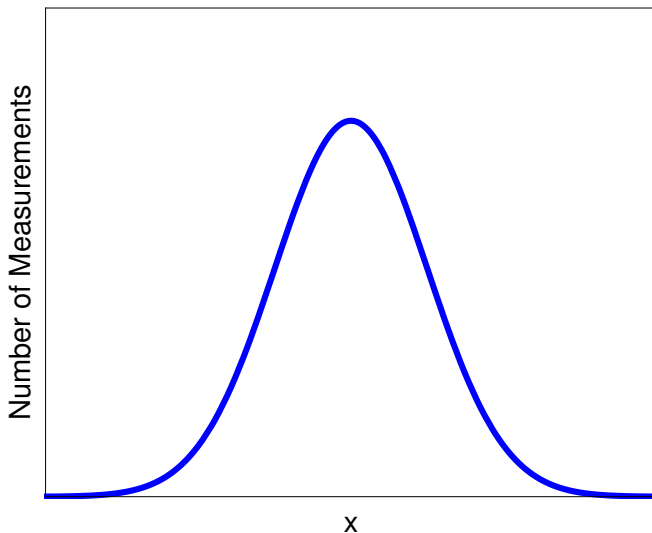Precise, but not accurate.
Average and Standard Deviation

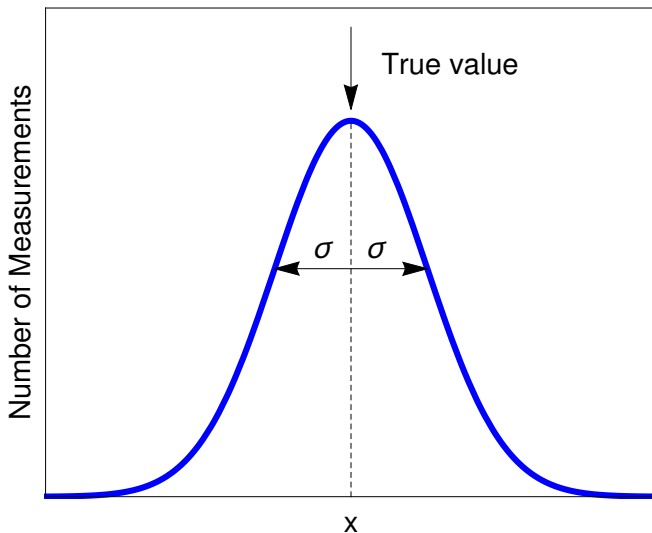Precise and accurate.
Average and Standard Deviation

Understanding some Statistics

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