Today in MA40189:

• aim: inferences about parameter $\theta$ given data $x$

• **Classical setting**
  – the data is treated as if it is random, even after it has been observed
  – the parameter is viewed as a fixed unknown constant
  – estimator $T(X)$ has properties derived from distribution $f(x | \theta)$, only distribution available to the classicist

• **Bayesian approach**
  – the parameter, having not been observed, is treated as random and thus possesses a probability distribution
  – the data, having been observed, is treated as being fixed
  – the Bayesian has distributions $f(\theta)$ (prior) and $f(\theta | x)$ (posterior) as well as $f(x | \theta)$