

## 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  $f(x | \theta)$