Previously on MA40189:

- posterior $f(\theta \,|\, x) = cg(\theta)$ where $g(\theta) \propto f(x \,|\, \theta)f(\theta)$
- worked with tractable distributions and identified c by recognising $g(\theta)$ as a kernel of a familiar parametric family
- final remarks about noninformative priors
  - Jeffreys' prior depends upon the form of the data and violates the likelihood principle

Today on MA40189:

- final remarks about noninformative priors (concluded)
  - improper priors do not always lead to proper posteriors
- Bayesian computation: calculate posterior summaries from distributions $f(\theta \,|\, x) = cg(\theta)$ which are
  - mathematically complex
  - often high dimensional
- Normal approximation about the mode $\tilde{\theta}$
- $\theta \,|\, x \sim N(\tilde{\theta}, I^{-1}(\tilde{\theta} \,|\, x))$ where $I(\theta \,|\, x)$ is the observed information,

$$I(\theta \,|\, x) = -\frac{\partial^2}{\partial \theta^2} \log f(\theta \,|\, x)$$