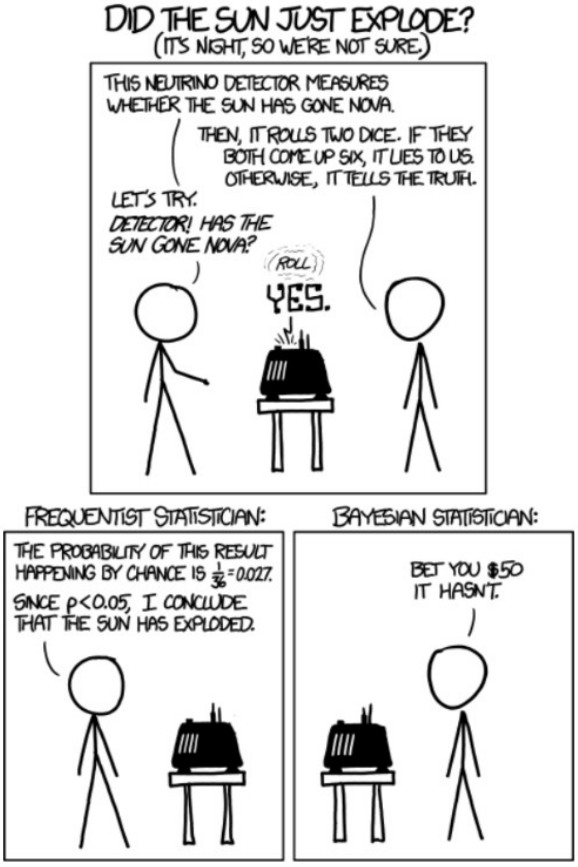
York University
Department of Mathematics and Statistics
MATH 2131
Quiz 1
Wednesday, January 17, 2024, 12 noon
Duration: 10 minutes
Aids allowed: non-programmable calculator
Instructor: Georges Monette



Let N be the event that the “Sun has gone nova”.

Let Y be the event that the neutrino detector says “Yes”.

Let’s suppose that P(N), before getting the signal from the neutrino detector, is extremely small, say 10^{-20}.

After seeing the signal from the neutrino detector, how would the Bayesian statistician assess the probability that the sun has gone nova?

Why do you think that standard hypothesis testing at the level $\alpha = 0.05$ seems to lead to a different conclusion?