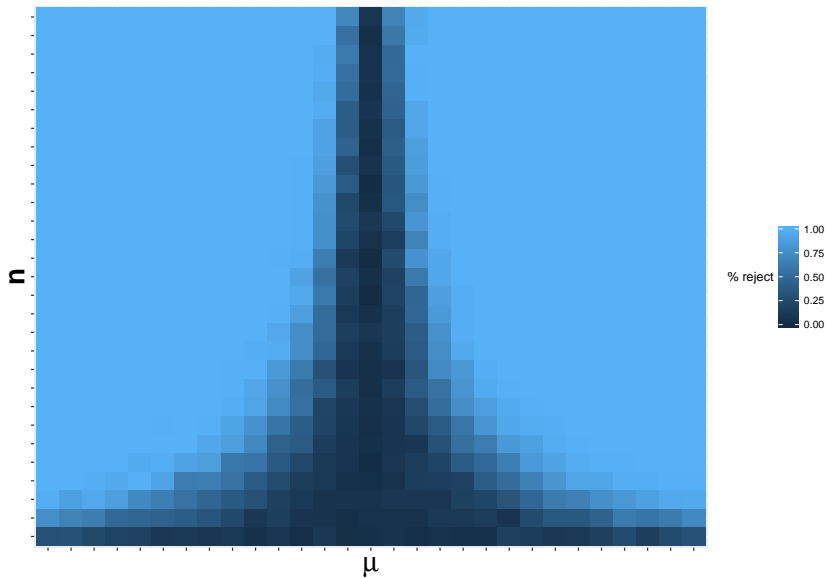# Computing Assignment #6

Group: redSloth (Tyler Hoppenfield, Daniel Mather, Iwunze Ugo)

2/28/2018

Heat Map
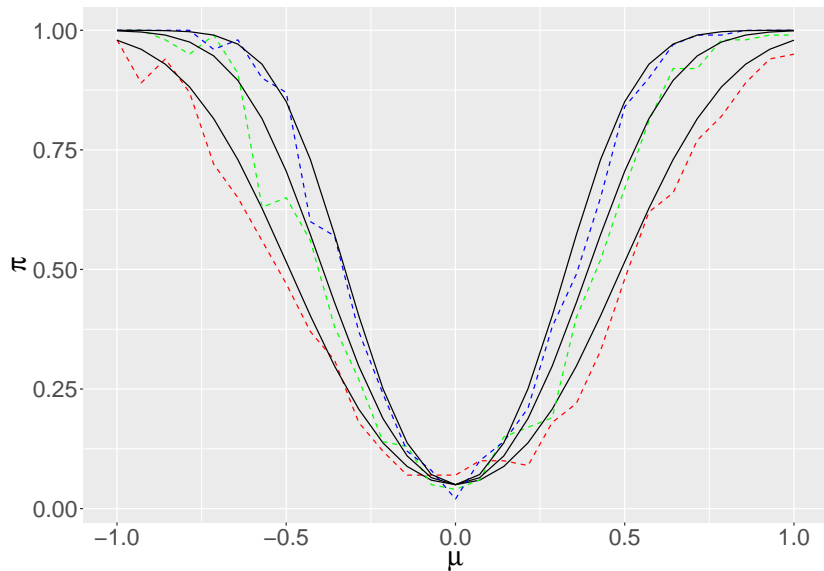
Power: Analytic solution
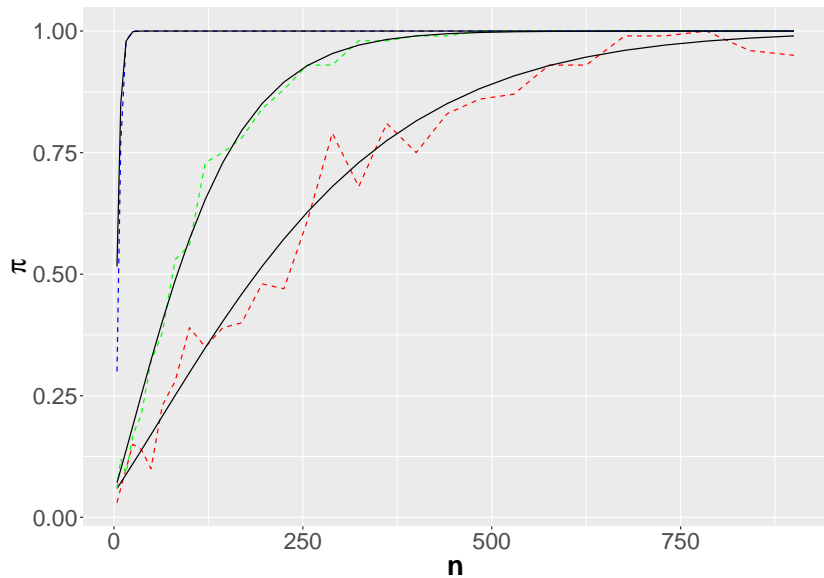
Note that $T_\mu \sim N(0, 1)$, where $T_\mu \equiv H_0 : \mu = \mu$, implies $T_0 = T_\mu + \mu\sqrt{n}$. And so,

$$\pi(\mu, n) = Pr(T_0 > 1.96 | \mu, n)$$
$$= Pr(T_\mu + \mu\sqrt{n} > 1.96 | \mu, n)$$
$$= 1 - Pr(T_\mu < 1.96 - \mu\sqrt{n} | \mu, n) + Pr(T_\mu < -1.96 - \mu\sqrt{n} | \mu, n)$$
$$\pi(\mu, n) = 1 - \Phi(1.96 - \mu\sqrt{n}) + \Phi(-1.96 - \mu\sqrt{n})$$

Power: Graph with fixed n

Power: Graph with fixed μ

Power: Practical Answers

- Yes, you can expect to reject the null more than 90% of the time
- To Reject 80% of the time, you would need about 9 obserations