First Name: Binh Last Name: Nguyen Student Number: 20687353

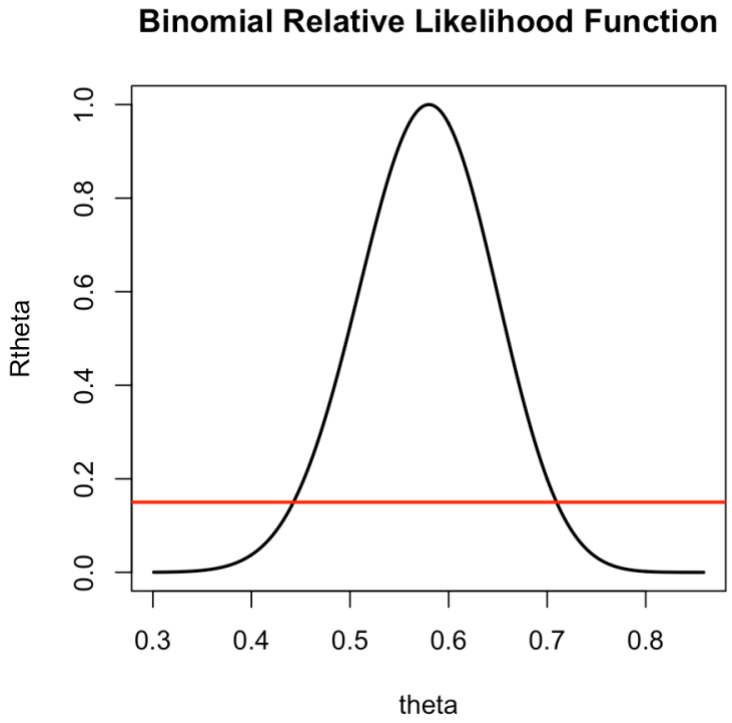
# Assignment 2 Template

**<u>Problem 1 (35 marks):</u> Fill in the information below based on your Binomial observation which was generated using your ID number as the random seed.**

**theta = 0.5500251** **y = 29**

**The maximum likelihood of theta is thetahat = 0.58**

## Insert the plot of the Binomial relative likelihood function here.



**Based on the graph of the relative likelihood function and the line y = 0.15 the 15% likelihood interval for theta is: [0.44, 0.71]**

**Using the R function uniroot the 15% likelihood interval is:**

**[0.4425824, 0.7095179]**

**(NOTE: To find the endpoints of the likelihood interval using**
uniroot(function(x) BinRLF(x)-0.15,lower=0.1,upper=0.15)
**you will need to change** "lower=0.1,upper=0.15" **to values that work for your data.)**

**Is theta = 0.2 a plausible value of theta for your data set? Why? (Refer to Table 4.2 in the Course Notes)**

Theta = 0.2 is very implausible value of theta for the data set because this theta is outside a 1% likelihood interval in light of the observed data due to Table 4.2

**Is theta = 0.8 a plausible value of theta for your data set? Why? (Refer to Table 4.2 in the Course Notes)**

Theta = 0.8 is very implausible value of theta for the data set because this theta is outside a 1% likelihood interval in light of the observed data due to Table 4.2

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