

# Likelihood

Grinnell College

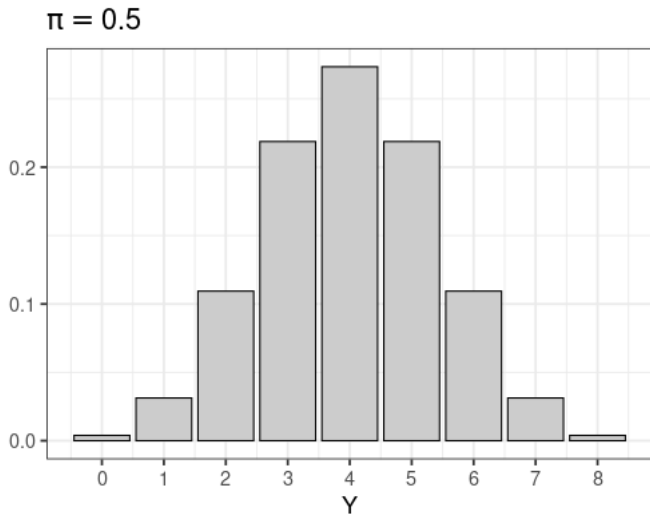
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## Warm-up

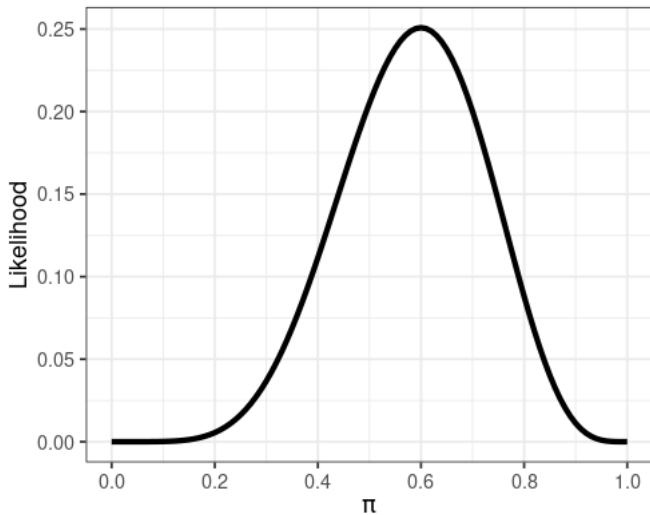
Suppose I am interested in determining the proportion of countries in which the average life expectancy is greater than 70 years old. To this end, we collect sample of 25 countries, finding that 13 of them have life expectancy greater than 70

- ▶ What is the estimated proportion of countries with  $LE > 70$ ?
- ▶ How would you construct a 95% confidence interval for the true value of  $\pi$ ?
- ▶ How would you test the hypothesis  $H_0 : \pi_0 = 0.6$ ?

Consider  $y = 6$  when  $n = 10$  and  $\pi = 0.5$



Now consider when  $y = 6$  and  $n = 10$



Now consider when  $y = 4$  and  $n = 10$

