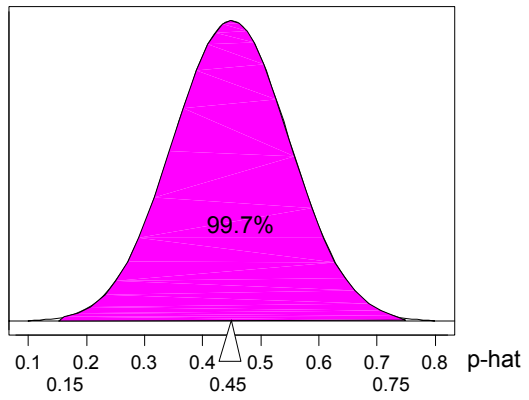
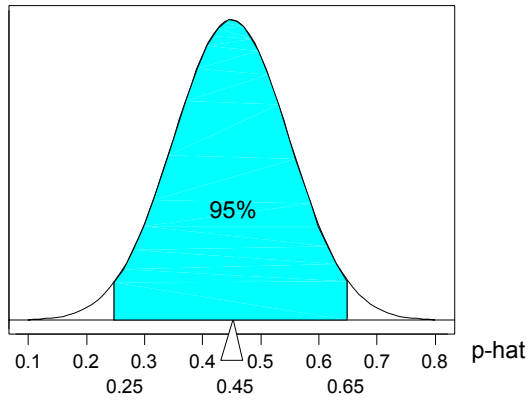
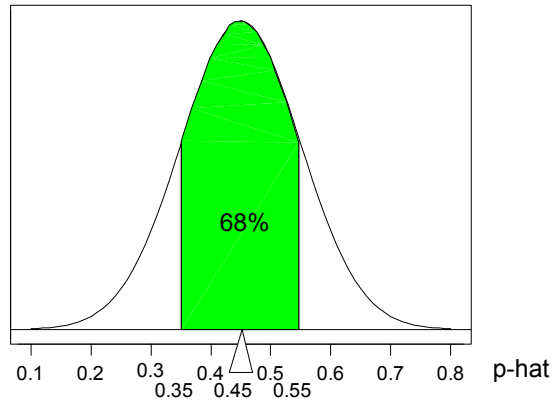


Sampling Distribution of \hat{p}
68-95-99.7 Rule



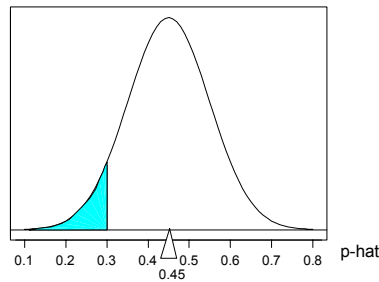
Sampling Distribution of \hat{p} , the sample proportion of orange Reeses Pieces

$$\text{mean} = p = 0.45$$

$$\text{standard deviation} = \sqrt{\frac{p(1-p)}{n}} = \sqrt{\frac{0.45(0.55)}{25}} = 0.0995$$

1. What is the chance that the sample (random sample of 25) proportion of orange Reeses Pieces is less than 0.30?

- Draw a picture:



- Standardize: $z = \frac{0.30 - 0.45}{0.0995} = \frac{-0.15}{0.0995} = -1.51$
 - Use Table Z: $z = -1.51$ from the table the area under the standard normal curve is 0.0655. The chance that there will be less than 30% orange Reeses Pieces is 0.0655.
2. What is the chance that there will be more than 70% orange Reeses Pieces in a random sample of 25?

- Draw a picture:

- Standardize:

- Use Table Z: