

1. You are interested in heights of American women. Based on a simple random sample of 100 American women, you calculate a 95% confidence interval for the mean height of 63.7 to 64.3 inches. Which of the following is true?

- (A) 95% of American women are between 63.7 and 64.3 inches tall.
- (B) We are 95% confident that the mean height of the 100 sampled women is between 63.7 and 64.3 inches.
- (C) We are 95% confident that the mean height of all American women is between 63.7 and 64.3 inches.
- (D) None of the above.

Recall that roughly 68% of observations in a normal distribution are within 1 standard deviation of the mean.

2. Heights of American men are roughly normally distributed with mean 70 inches and standard deviation 3 inches. The sampling distribution for sample heights with samples of size 100 is also roughly normal with mean 70 inches and standard error 0.3 inches. Which of the following are true?

- (A) 68% of American men are between 67 and 73 inches tall.
- (B) 68% of simple random samples of 100 American men will have a mean height between 69.7 and 70.3 inches.
- (C) 68% of simple random samples of 100 American men will have a mean height between 67 and 73 inches.
- (D) None of the above OR more than one of the above.

3. You are interested in calculating a 99% confidence interval for a proportion, and the sampling distribution is well approximated by a normal distribution. Which of the following R commands would you use to find  $z^*$  for your confidence interval?

- (A) `pnorm(0.99)`
- (B) `qnorm(0.99)`
- (C) `pnorm(0.995)`
- (D) None of the above

#### 4. True or False?

A 50% confidence interval computed from a sample is wider than a 95% confidence interval computed from the same sample.