Lesson 11: Inference for One Mean; Sigma unknown (Hypothesis Test)

Preparation

## Solutions

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| Problem | Part | Solution |
| 1 | - | - Symmetrical - Mean of 0 - Exact shape depends on the degrees of freedom - Bell Shaped - More area in the tails than the standard normal distribution |
| 2 | - | ) |
| 3 | - |  |
| 4 | - | - Sigma is not known - We compute a t-score from the Student t-distribution rather than a z-score from the normal distribution. (We cannot use the Normal Applet to compute t-scores.) - We must now consider degrees of freedom for the t-distribution where the normal distribution did not have degrees of freedom. |
| 5 | - |  |
| 6 | - | - A simple random sample was drawn from a population. - is normally distributed. |
| 7 | - | The mean is 46.733. The standard devation is 8.827 |
| 8 | - | It is a random sample from a population. The ’s are normally distributed |
| 9 | - | (41.845 , 51.622) |
| 10 | - | (39.948 , 53.518) |
| 11 | A | (41.845 , 51.622) |
| 11 | B | (39.948 , 53.518) |
| 12 | - | The margin of error for the confidence interval is smaller for a 95% confidence level than a 99% confidence level. |
| 13 | A |  |
| 13 | B | t = -0.117 |
| 13 | C | df = 14 |
| 13 | D | Solution |
| 13 | E | P-value = 0.909 |
| 13 | F | fail to reject the null hypothesis |
| 13 | G | We have insufficient evidence to conclude that the mean age of this realtor’s customers who are buying second homes, is different than the national average. |