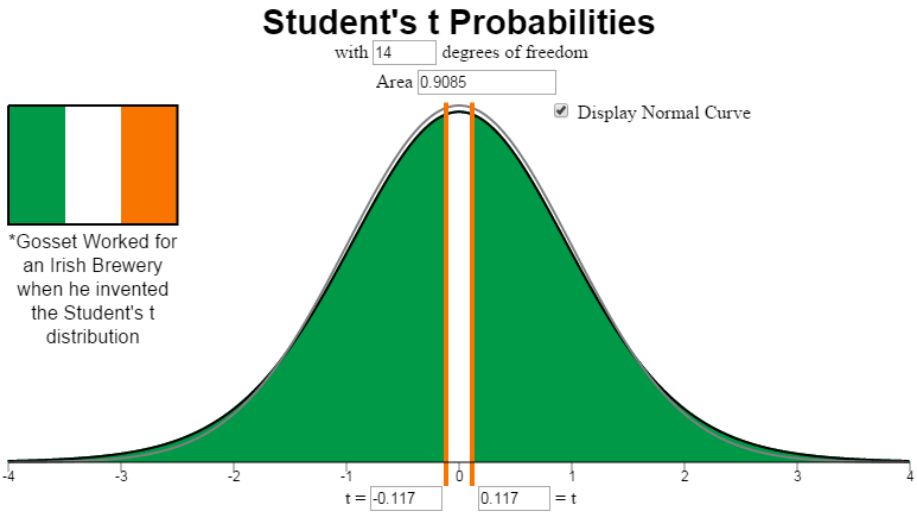
Lesson 11: Inference for One Mean; Sigma unknown (Hypothesis Test)

Preparation

Solutions

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	-	$df = n - 1$(that is sample size $- 1$)
3	-	$\bar{x} - t^* \times \frac{s}{\sqrt{n}}, \bar{x} + t^* \times \frac{s}{\sqrt{n}}$
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	-	$t = \frac{\bar{x} - \mu}{s/\sqrt{n}}$
6	-	- A simple random sample was drawn from a population. - $\bar{x}$ 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 $\bar{x}$'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	$H_o : \mu = 47$ $H_a : \mu \neq 47$
13	B	t = -0.117
13	C	df = 14

Problem	Part	Solution
		
13	D	
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.