Inference for numerical data

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Practice: 5.5, 5.13, 5.19, 5.31, 5.45

Graded: 5.6, 5.14, 5.20, 5.32, 5.48

5.6 Working backwards, Part II. A 90% confidence interval for a population mean is (65, 77). The population distribution is approximately normal and the population standard deviation is unknown. This confidence interval is based on a simple random sample of 25 observations.

Calculate the sample mean, the margin of error, and the sample standard deviation.

```
#For any confidence interval, the center point is the mean of two values
samplesize = 25
samplemean <- (65+77)/2

#Calculate t-score

me <- 77-samplemean

tscore <- qt(.05,24)*-1

s <- (me/tscore)*(sqrt(samplesize))
```

sample mean = 71 Marigin of error = 6 sample SD = 17.5348146