





Bookmarks

- ▶ Important Pre-Course Survey
- ▶ Contact Us
- ▶ How To Navigate the Course
- ▶ Discussion Board
- ▶ Office Hours
- ▶ Week 0: Introduction to Data (Optional Review)
- ▶ Week 1: Sampling
- ▶ Week 2: Hypothesis Testing (One Group Means)
- ▼ Week 3: Hypothesis Testing (Two Group Means)

**Readings**

Reading Check due  
May 03, 2016 at 17:00  
UTC 

**Lecture Videos**

Comprehension Check  
due May 03, 2016 at  
17:00 UTC 

Week 3: Hypothesis Testing (Two Group Means) &gt; Problem Set &gt; Question 2



Bookmark

## Question 2

A study was conducted to compare the resting pulse rates of college smokers and non-smokers. The data for a randomly selected group is summarized in the table below. Pulse rates were normally distributed within each group.

Group	Sample Size (n)	Average Pulse Rate (bpm)	Standard Deviation of Scores
Smokers	26	80	5
Non-Smokers	32	74	6

(1/1 point)

2a. What is the appropriate method for analyzing this data?


☐ Paired T-Test☒ Independent T-Test ☐ Dependent T-Test*You have used 1 of 1 submissions*

(1/1 point)


2b. What is the **alternative hypothesis** for this test if the researchers expect smoking to raise pulse rates?

## R Tutorial Videos


## Pre-Lab

Pre-Lab due May 03, 2016 at 17:00 UTC 


## Lab

Lab due May 03, 2016 at 17:00 UTC 

## Problem Set

Problem Set due May 03, 2016 at 17:00 UTC 

- ▶ Week 4:  
Hypothesis  
Testing  
(Categorical  
Data)

☒  $\mu_{\text{smokers}} > \mu_{\text{non-smokers}}$  

☐  $\mu_{\text{smokers}} < \mu_{\text{non-smokers}}$

☐  $\mu_{\text{smokers}} = \mu_{\text{non-smokers}}$

*You have used 1 of 1 submissions*

(1 point possible)

2c. How many **degrees of freedom** should we use for this test if we are to estimate rather than use a calculator?

56



Answer: 25

56

*You have used 1 of 1 submissions*

(1/1 point)

2d. What is **t-critical**, assuming  $\alpha=0.05$ ? (Round to 3 decimal places. Use your answer to Question 2c to help find the answer.)

1.708



Answer: 1.708

1.708

*You have used 1 of 1 submissions*

(1/1 point)

2e. Calculate the **standard error**. (Round to 2 decimal places.)

1.44



Answer: 1.44

1.44

You have used 1 of 1 submissions

(1/1 point)

2f. Calculate the **test statistic**. (Round to 2 decimal places, and use rounded values from previous answers.)

4.16



Answer: 4.15

4.16

You have used 1 of 1 submissions

(1/1 point)

2g. Is there evidence to suggest that the pulse rate of smokers is higher on average than the pulse rate of non-smokers?

☒ Yes

☐ No

You have used 1 of 1 submissions

(1/1 point)

2g. How would the p-value be reported in your conclusion?

☒  $p < 0.05$

☐  $p > 0.05$

You have used 1 of 1 submissions

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