

Lecture 4: Review of Statistics (2)

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February 15, 2019

Today

- ▶ Finish reviewing statistics
- ▶ Quiz 3: due tonight, 11:59pm
- ▶ Assignment 1: due Feb 24 (Sunday), 11:59pm

3.2 Hypothesis Testing Concerning the Population Mean

Comparing Means for Different Populations

Hypothesis tests for difference Between two means

Step 1: write down null

- ▶ Null hypothesis: $H_0 : \mu_m - \mu_w = d_0$
- ▶ Alternative hypothesis: $H_1 : \mu_m - \mu_w \neq d_0$

What if we want to test if two groups are significantly different in their means?

- ▶ Null hypothesis: $H_0 : \mu_m - \mu_w = 0$
- ▶ Alternative hypothesis: $H_1 : \mu_m - \mu_w \neq 0$

Step 2: construct standard error

- ▶ Mean
- ▶ Variance
- ▶ Standard error

Step 3: construct t-statistics

T-stat

Step 4: get p-value

Step 5: reject or fail to reject

What do they mean???

- ▶ if reject: two groups' mean, μ_m and μ_w , are significantly different
- ▶ if fail to reject: we cannot conclude that two groups have significantly different mean

Review Concepts of Chapter 3

Concepts 3.1-3.3

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Concepts 3.5-3.7

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