

Notes 8 Qustions

1. Weighted Averages

Should the student average Monday's & Tuesday's means?

$$\text{Class mean} = (90 + 75) / 2 = 82.5$$

A. Yes

B. No

2. Weighted Averages cont.

Why shouldn't the student **average the averages**?

- A. Because they have different values
- B. Because they have different sample sizes (n)
- C. Because they are from different populations

3. Case B

What is the range of typical difference between the **sample mean** and **30**?

- A. Still 17-23
- B. Should always be 10
- C. 7-13
- D. Not enough information

4. Case C

What is the range of typical difference between the **sample mean from pop 1** and **sample mean from pop 2**?

- A. Should always be 10
- B. Still 7-13
- C. A wider range than 7-13 (e.g. 6-14, 5-15)
- D. A narrower range than 7-13 (e.g. 8-12, 9-11)

5. Standard Error of the difference between means

If you wanted a value to describe how much the

difference between two sample means

deviates from the

difference between the two population means

Which would you use?

A. the standard deviation of the population

B. the standard error of the mean

C. the standard error of the mean *plus something*

D. the standard error of the mean *divided by something*

6. Standard Error

Why do we need **standard error**?

A. It describes the variability within a sample

B. It defines how much samples deviate from populations by chance

C. It measures the difference between a sample and the population

7. Standard Error

The SE of the sample mean and
the SE of the sample mean difference

use essentially the same formula.

- A. True
- B. False

8. Standard Error

The SE of the sample mean difference and the SE of the difference in sample means

use essentially the same formula.

- A. True
- B. False

9, Standard Error

Which SE is paired with the correct test?

- A. 1-sample = SE of the sample mean difference
- B. 2-sample, dependent = SE of the sample mean
- C. 2-sample, dependent = SE of the difference in sample means
- D. 2-sample, independent = SE of the difference in sample means

10. 2-sample, independent

Which is not different for 2-sample dependent vs independent?

- A. whether we use pooled variance or not
- B. the formula for standard error
- C. the information need to find t^*
- D. degrees of freedom

11. Review: SE

How did we find **standard error of the mean**?

A. square root of ($SS / n - 1$)

B. It is given in a table

C. It is the standard deviation of the DSM

12. Review: DSM

True or false?

We created the distribution of sample means by **repeatedly collecting sample means** from a population for a given sample size.

A. True

B. False

13. Dist. of the difference in sample means

How would you guess we create **something like a DSM for the 2-samples, independent t test?**

A. Create a DSM for each population and find the difference between DSM means

B. Build a distribution by repeatedly finding a difference between samples

14. **DSM** vs **Dist. of the difference in sample means**

What do the **DSM** and **Dist. of the difference in sample means** have in common?

- A. They tell us how much sample values differ from population values by chance
- B. Their standard deviations are called standard error
- C. They become less variable as sample size increases

15. Pooled variance shortcut

In which case can you use the shortcut to avoid calculating the pooled variance?

A. t-test of 8 subjects with before and after values

B. t-test of 10 patients on drug and 12 patients on placebo

C. t-test of 20 students in Tristan's section and 20 student's in Marisa's section