

1. In a recent Gallup poll of 511 adults, 286 (56%) said that they were in favor of the death penalty for a person convicted of murder. We want to use a 0.01 significance level to test the claim that more than 50% of all adults are in favor of the death penalty for a person convicted of murder. (6 points each)
 - a. Identify the claim, null hypothesis, and alternative hypothesis and express it symbolically.
 - b. Find the P-Value. Show your work for credit.
 - c. Determine if you will “reject” or “fail to reject” the null hypothesis. **Explain your reasoning.**
 - d. Write a concluding statement about the claim.

2. It has been reported that the mean head circumference of adult males is 55.90 cm with a standard deviation of 1.7 cm. In a study involving 20 randomly selected male college students, the mean head circumference was 55.12 cm. At the 0.05 significance level, test the claim that male college students have smaller heads than the average adult male. **Assume the population standard deviation for all male college students is the same as for adult males in general. (6 points each)**

a. Identify the claim, null hypothesis, and alternative hypothesis and express it symbolically.

b. Find the P-Value. Show your work for credit.

c. Determine if you will “reject” or “fail to reject” the null hypothesis. **Explain your reasoning.**

d. Write a concluding statement about the claim.

3. In a sample of 40 grown-ups, the mean assembly time for a boxed swing set was 1.78 hours with a standard deviation of 0.75 hours. Test the claim that the average assembly time is less than 2 hours at a 0.01 significance level. (6 points each)

a. Identify the claim, null hypothesis, and alternative hypothesis and express it symbolically.

b. Find the P-Value. Show your work for credit.

c. Determine if you will “reject” or “fail to reject” the null hypothesis. **Explain your reasoning.**

d. Write a concluding statement about the claim.

4. Eight college students are surveyed for the number of hours per week they spend on Facebook. This number is paired with student's GPA. Using this data, answer the questions below. (6 points each)

x =facebook hours per week	y = GPA
1.0	3.2
1.5	2.9
2.0	3.2
2.2	2.9
5.0	2.5
5.5	2.0
6.0	2.2
7.5	2.1

- a. Find the equation of "best fit" for the data. Round to 2 decimal places. (5pts)
- b. Use your calculator to calculate the correlation coefficient (r).

Describe the correlation by stating if it is strong, moderate, or weak and positive or negative.

Is there a significant correlation? (9pts)

- c. If a student spends 3.5 hours on Facebook per week what would you expect their GPA to be? (5pts)
- d. What proportion of variation in GPA is explained by the variation facebook hours? (5pts)

5. (4 points)

Match each scatterplot to one of the correlation coefficients below.

$r = 1.00$

$r = -0.224$

$r = -1.00$

$r = 0.763$

$r = -0.785$

