60080079 Introduction to Statistical Methods
Semester 2 2023-2024
Solutions 5

1. Write your answer as a single-digit number: 4

2. PART I: Write your answer as a two-digit number: 15
   PART II: Write your answer as a two-digit number: 12
   PART III: Write your answer as a two-digit number: 16

3. PART I: Write your answer as a two-digit number: 12
   PART II: Write your answer as a two-digit number: 34

4. PART I: Write your answer as a two-digit number: 32
   PART II: Write your answer as a two-digit number: 31

5. Write your answer as a three-digit number: 213

6. Write your answer as a two-digit number: 12

6.1. Recall the correspondence between hypothesis testing and confidence interval: If the hypothesized value in the null hypothesis is contained in the confidence interval, the null hypothesis will be retained. Conversely, if the null hypothesis is retained, the hypothesized value is contained in the confidence interval. A p-value of .06 means that the null hypothesis will be retained at a significance level of .05. This means that the mean under the null hypothesis, 10, must be in the 95% confidence interval.

6.2. With a p-value of .06, the null hypothesis will be rejected at a significance level of .10. This means that the hypothesized value under the null hypothesis is not contained in the corresponding 90% confidence interval.

7. Write your answer as a single-digit number: 3

8. Write your answer as a two-digit number: 33

$$M.E. = \alpha^* \times \sigma_{\bar{X}} = \alpha^* \times \frac{\sigma}{\sqrt{n}} = 1.96 \times \frac{4.5}{\sqrt{24}} = 1.8$$
$$C.I. = \bar{X} \pm M.E. = 61.79 \pm 1.8 \Rightarrow (59.99, 63.59)$$

9. PART I: Write your answer as a two-digit number: 24
   PART II: Write your answer as a two-digit number: 15

10. Write your answer as a single-digit number: 1

11. Write your answer as a single-digit number: 3