Lesson 11.4 Practice: Type I and Type II Errors and Power

School Launch · Statistics · Unit 11: Significance Tests · Worksheet A

Calculator / tables

Name _____ Date _____ Score _____ / 10

Show your work under each problem, one step per line, and check your answer. Word problems: name the unknown, write the equation, solve, and answer in a sentence with units.

1. A test uses $\alpha = 0.05$ and has $P(\text{Type II error}) = 0.09$. What is the probability of a Type I error, and what is the power? EASY

2. A test uses $\alpha = 0.01$ and has $P(\text{Type II error}) = 0.15$. What is the probability of a Type I error, and what is the power? EASY

3. A test uses $\alpha = 0.05$ and has $P(\text{Type II error}) = 0.31$. What is the probability of a Type I error, and what is the power? EASY

4. A test uses $\alpha = 0.1$ and has $P(\text{Type II error}) = 0.29$. What is the probability of a Type I error, and what is the power? MEDIUM

5. A test uses $\alpha = 0.1$ and has $P(\text{Type II error}) = 0.2$. What is the probability of a Type I error, and what is the power? MEDIUM

6. A test uses $\alpha = 0.01$ and has $P(\text{Type II error}) = 0.06$. What is the probability of a Type I error, and what is the power? MEDIUM

7. A test uses $\alpha = 0.01$ and has $P(\text{Type II error}) = 0.34$. What is the probability of a Type I error, and what is the power? MEDIUM

8. A test uses $\alpha = 0.1$ and has $P(\text{Type II error}) = 0.23$. What is the probability of a Type I error, and what is the power? HARD

9. A test uses $\alpha = 0.1$ and has $P(\text{Type II error}) = 0.17$. What is the probability of a Type I error, and what is the power? HARD

10. A test uses $\alpha = 0.01$ and has $P(\text{Type II error}) = 0.29$. What is the probability of a Type I error, and what is the power? HARD