Lesson 13.3 Practice: Thinking Wisely about Statistics

School Launch · Statistics · Unit 13: Chi-Square 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 researcher runs 16 independent tests at $\alpha = 0.05$ when every null hypothesis is true. What is the probability of at least one false "significant" result (four decimals)? What lesson does this teach? EASY

2. A researcher runs 20 independent tests at $\alpha = 0.05$ when every null hypothesis is true. What is the probability of at least one false "significant" result (four decimals)? What lesson does this teach? EASY

3. A researcher runs 26 independent tests at $\alpha = 0.05$ when every null hypothesis is true. What is the probability of at least one false "significant" result (four decimals)? What lesson does this teach? EASY

4. A researcher runs 15 independent tests at $\alpha = 0.05$ when every null hypothesis is true. What is the probability of at least one false "significant" result (four decimals)? What lesson does this teach? MEDIUM

5. A researcher runs 22 independent tests at $\alpha = 0.05$ when every null hypothesis is true. What is the probability of at least one false "significant" result (four decimals)? What lesson does this teach? MEDIUM

6. A researcher runs 17 independent tests at $\alpha = 0.05$ when every null hypothesis is true. What is the probability of at least one false "significant" result (four decimals)? What lesson does this teach? MEDIUM

7. A researcher runs 18 independent tests at $\alpha = 0.05$ when every null hypothesis is true. What is the probability of at least one false "significant" result (four decimals)? What lesson does this teach? MEDIUM

8. A researcher runs 23 independent tests at $\alpha = 0.05$ when every null hypothesis is true. What is the probability of at least one false "significant" result (four decimals)? What lesson does this teach? HARD

9. A researcher runs 25 independent tests at $\alpha = 0.05$ when every null hypothesis is true. What is the probability of at least one false "significant" result (four decimals)? What lesson does this teach? HARD

10. A researcher runs 21 independent tests at $\alpha = 0.05$ when every null hypothesis is true. What is the probability of at least one false "significant" result (four decimals)? What lesson does this teach? HARD