**Ch 11**

**11.4**

**Use the following contingency table:**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **A** | **B** | **Total** |
| **1** | **20** **25** | **30** **25** | **50** |
| **2** | **30****25**  | **20****25** | **50** |
| **Total** | **50** | **50** | **100** |

1. **Compute the expected frequency for each cell?**

 **25**

 **25**

1. **Compute Is it significant at α = 0.05?**



**\*= 3.841**

**11.5**

**An online survey of 1,000 adults asked, “What do you buy from a mobile device?” The results indicated that 61% of the females said clothes as compared to 39% of the males. (Data extracted from \_Ebates.com 2014 Mobile Shopping Survey: Nearly Half of Americans Shop from a Mobile Device\_). The sample sizes of males and females were not provided. Suppose that the results were as shown in the following table:**

|  |  |  |
| --- | --- | --- |
|  | **GENDER** |  |
|  | **Male** | **Female** | **Total** |
| **Yes** | **195** **250** | **305** **250** | **500** |
| **No** | **305****250**  | **195****250** | **500** |
| **Total** | **500** | **500** | **1000** |

**Is there evidence of a significant difference between the portion of males and females who say they buy clothing from their mobile device at the 0.01 level of significance?**

 **Solution:**

**Step 1: state the hypothesis:**

**Step2: Select the level of significance and critical value( α = 0.01):**

**Step 3: Find the appropriate test statistic.**



**Step 4: State the decision rule**

**Reject**  **if**

 **Step 5: Decision Reject**

11.12

**Use the following contingency table:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **A** | **B** | **C** | **Total** |
| **1** | **10** **20**  | **30** **30** | **50** **40**  | **90** |
| **2** | **40****30**  | **45****45** | **50** **60** | **135** |
| **Total** | **50** | **75** | **100** | **225** |

**a.** **Compute the expected frequency for each cell.**

 **20**

 **45 60**

 b. **Compute** . **Is it significant at α = 0.05?**



 **> Then the result is deemed significsnt**

11.25

**Where people look for news is different for various age groups. A study indicated where different age groups primarily get their news:**

|  |  |
| --- | --- |
|  | **AGE GROUP** |
| **MEDIA** | **Under 36** | **36-50** | **50+** | **Total** |
| **Local TV** | **109** | **118** | **138**  | **365** |
| **National TV** | **73** | **105** | **125**  | **303** |
| **Radio** | **77** | **98** | **111** | **286** |
| **Local newspaper** | **52** | **78** | **101** | **231** |
| **Internet** | **93** | **87** | **75** | **255** |
| **Total** | **404** | **486** | **550** | **1440** |

 **At the 0.05 level of significance, is there evidence of a significant relationship between the age group and where people primarily get their news? If so, explain the relationship**.

**Step 1: state the hypothesis:**

**Step2: the level of significance ( α = 0.05):**

 **Degree of freedom = (2)(4)=8**

 **Step 3: Compute the expected frequency for each cell.**

 **102.40**

 **102.26 115.73**

 **96.53 109.24**

 **77.96 88.23**

 **86.06 97.39**

**Find the appropriate test statistic.**



**Step 4: State the decision rule**

**Reject if**

 **>**

**Reject**

 **That mean**