

12.12 Use the following contingency table:

	A	B	C	Total
1	10	30	50	90
2	40	45	50	135
Total	50	75	100	225

- Compute the expected frequency for each cell.
- Compute χ^2_{STAT} . Is it significant at $\alpha = 0.05$?

12.14 How common are financial cost or contractual constraints associated with smartphone ownership? A survey of smartphone owners found that 48% of the 18- to 29-year-olds, 38% of the 30- to 49-year-olds, 25% of the 50- to 64-year-olds, and 19% of those age 65 or older have reached the maximum amount of data they

are allowed to use as part of their plan, at least on occasion. (Data extracted from *U.S. Smartphone Use 2015*, bit.ly/1KL2WcW.)

Suppose the survey was based on 200 smartphone owners in each of the four age groups: 18 to 29, 30 to 49, 50 to 64, and 65+.

- At the 0.05 level of significance, is there evidence of a difference among the age groups in the proportion of smartphone owners who have reached the maximum amount of data they are allowed to use as part of their plan, at least on occasion?
- Determine the p -value in (a) and interpret its meaning.
- If appropriate, use the Marascuilo procedure and $\alpha = 0.05$ to determine which age groups differ.