Exploration 5A: Cool Toys for Tots

Now we have all the tools we need to look at the various stores in the two sales regions of *Cool Toys for Tots* (examples 5.A.3, 3.A.3, 3.B.3) in complete detail. Which individual stores in our chain are performing the best, relative to their regions? Which stores are performing worst in their regions? Which are performing best and worst overall? To analyze these questions, try computing z-scores for each store in two different ways: relative to each region and relative to the entire chain of stores. You can also analyze the data with and without any outliers.

The data file “C05 Tots.xls” contains a column of identifiers (store number), a categorical variable identifying the region of each store, and the sales figures for the stores (numerical variable).

Here are some questions to guide you in this exploration:

1. How can you compute the z-scores for each store?
2. How do you compute z-scores for each store relative to only the stores in its region? (Try looking at the How to Guide for information on “How to Stack and Unstack Data”.)
3. How do you identify an outlier? Is it an outlier for its region or for the entire chain of stores?
4. Are there any stores whose relative performance in their region is not reflected when it is compared to the entire chain or vice versa?
5. Are these stores performing poorly with respect to (1) the entire chain or (2) their individual regions?