**Summarizing the Cereal Data**

1. Read the cereal data, and produce quick summaries using str, summary, contents and describe (recall that the last two are in the Hmisc package). Interpret the results.
2. Find the average sodium, fiber and carbohydrate contents by Manufacturer.
3. Add a new variable ’SodiumClass’, which is ’high’ when sodium >100 and ’low’ otherwise. Make sure the new variable is a factor. Look at the examples in factors. Now, find the average, minimum and maximum sugar content for ’low’ and ’high’ sodium. Hint: make sure to use na.rm=TRUE, because the dataset contains missing values.
4. Find the maximum sugar content by Manufacturer and sodiumClass, using tapply. Inspect the result and notice there are missing values. Try to use na.rm=TRUE as an additional argument to tapply, only to find out that the values are still missing. Finally, use xtabs to count the number of observations by the two factors to find out we have missing values in the tapply result.
5. Repeat the previous question with summaryBy. Compare the results.
6. Count the number of observations by Manufacturer and whether the cereal is ’hot’ or ’cold’, using xtabs.