Chapter 4

# Try It Yourself: Determine Outliers Using the Quartile and Mean and Standard Deviation Methods

## StatCrunch Instructions

1. Open the videogames data in StatCrunch
2. Calculate the Quartile Method thresholds using the global\_sales variable
   1. Select Data→Compute→Multiple Expressions
   2. In the first row’s Name box, type “Q Mild Lo”   
      (note: we use Q for Quartile Method)
   3. In the first row’s Expression box, enter: *Q1(global\_sales)-1.5\*iqr(global\_sales)*
   4. In the second row’s Name box, type “Q Mild Hi”
   5. In the second row’s Expression box, enter: *Q3(global\_sales)+1.5\*iqr(global\_sales)*
   6. In the third row’s Name box, type “Q Reg Lo”
   7. In the third row’s Expression box, enter: *Q1(global\_sales)-3\*iqr(global\_sales)*
   8. Click the + button at the end of the third row to add a fourth row
   9. In the fourth row’s Name box, type “Q Reg Hi”
   10. In the fourth row’s Expression box, enter: *Q3(global\_sales)+3\*iqr(global\_sales)*
   11. All four rows should keep the default check box under Save

A screenshot of a computer

Description automatically generated

* 1. Click Compute!
     1. Look for the answers in the first row of new columns in the StatCrunch sheet

1. Calculate the Mean/SD Method thresholds using the global\_sales variable
   1. Data→Compute→Multiple Expressions
   2. In the first row’s Name box, type “M Mild Lo”   
      (note: we use M for Mean/SD Method)
   3. In the first row’s Expression box, enter: *mean(global\_sales)-2\*std(global\_sales)*
   4. In the second row’s Name box, type “M Mild Hi”
   5. In the second row’s Expression box, enter: *mean(global\_sales)+2\*std(global\_sales)*
   6. In the third row’s Name box, type “M Reg Lo”
   7. In the third row’s Expression box, enter: *mean(global\_sales)-3\*std(global\_sales)*
   8. Click the + button at the end of the third row to add a fourth row
   9. In the fourth row’s Name box, type “M Reg Hi”
   10. In the fourth row’s Expression box, enter: *mean(global\_sales)+3\*std(global\_sales)*
   11. All four rows should keep the default check box under save
   12. Click Compute!
       1. Look for the answers in the first row of new columns in the StatCrunch sheet.
2. Count the number of observations
   1. Select Stat → Summary Stats → Columns
   2. Select columns → global\_sales
   3. Count Outliers using the Quartile Method
      1. For Mild High outliers, in the “Where:” box enter:   
         *global\_sales > Q3(global\_sales) + (1.5 \* iqr(global\_sales))*
   4. Statistics → n
   5. Click Compute!
   6. Repeat for the remaining outlier calculations, replacing 4(c)(i) with the following “Where:” field inputs:
3. Quartile Method for Regular High outliers

*global\_sales > Q3(global\_sales) + (3 \* iqr(global\_sales))*

1. Mean/SD Method for Mild High outliers  
   *global\_sales > mean(global\_sales) + (2\*std(global\_sales))*
2. Mean/SD Method for Regular High outliers  
   *global\_sales > mean(global\_sales) + (3\*std(global\_sales))*

Note: if there are no rows to count, StatCrunch gives the following error message. If the Where statement is correct, ignore the error. This result means the count is 0.

