

## Lesson #9.4: Using Statistics with Spreadsheets

Date: May 28, 2025**Learning Goal:** We are learning to use spreadsheets to calculate statistical summaries.

Spreadsheets are AMAZING. Let's take a look.

The image shows a screenshot of the Microsoft Excel application window. The title bar reads 'Excel'. The menu bar includes 'File', 'Edit', 'View', 'Insert', 'Format', 'Tools', 'Data', 'Window', and 'Help'. The ribbon is set to 'Home', with sub-tabs for 'Font', 'Paragraph', 'Styles', 'Cells', and 'Editing'. The 'Font' tab is active, showing options for font face (Calibri), size (12), bold, italic, underline, text color, and background color. The 'Cells' tab shows the 'General' format, with currency, percentage, and decimal options. The 'Editing' tab shows the 'Paste' button. The formula bar shows 'C3' and 'fx'. The spreadsheet grid has columns A through H and rows 1 through 12. Handwritten annotations include: 'TOOL BAR (Tools similar to Words)' pointing to the ribbon; 'SPECIAL EXCEL TOOLS' pointing to the currency, percentage, and decimal options; 'FUNCTIONS / FORMULA BOX' pointing to the formula bar; 'NAME BOX' pointing to the cell reference 'C3'; 'CELL' pointing to a cell in the grid; 'COLUMN HEADINGS' pointing to the column letters; 'Row HEADINGS' pointing to the row numbers; and 'ACTIVATES FORMULAS' pointing to the equals sign in the formula bar. A formula '=B10-B8' is entered in cell C3.

Useful formulas: FUNCTIONS

|                    |                     |
|--------------------|---------------------|
| Sum                | = SUM ( )           |
| Count              | = COUNT ( )         |
| Mean               | = AVERAGE ( )       |
| Median             | = MEDIAN ( )        |
| Mode               | = MODE ( )          |
| Minimum            | = MIN ( )           |
| Maximum            | = MAX ( )           |
| Range              | = MAX ( ) - MIN ( ) |
| Standard Deviation | = STDEV.P ( )       |

\*N.A ← no mode.

a) Open excel and type in the data into a column. You can type in just the second column.

1. Albert Pujols is one of the best baseball players of all time. Below are the number of homeruns he has hit in every year he has played.

| Year | HR |
|------|----|
| 2001 | 37 |
| 2002 | 34 |
| 2003 | 43 |
| 2004 | 46 |
| 2005 | 41 |
| 2006 | 49 |
| 2007 | 32 |
| 2008 | 37 |
| 2009 | 47 |
| 2010 | 42 |
| 2011 | 37 |
| 2012 | 30 |
| 2013 | 17 |
| 2014 | 28 |
| 2015 | 40 |
| 2016 | 31 |
| 2017 | 23 |
| 2018 | 19 |
| 2019 | 23 |
| 2020 | 6  |
| 2021 | 17 |

2. This table shows the average salary for various job sectors in Canada (as of 2021).

| Job Sectors                             | Average Salary |
|---|----------------|
| Accommodation and Food Services         | \$22,877       |
| Administrative and Support              | \$47,369       |
| Arts, Entertainment and Recreation      | \$40,241       |
| Construction                            | \$68,374       |
| Education                               | \$58,343       |
| Finance and Insurance                   | \$76,843       |
| Forestry and Logging                    | \$58,739       |
| Health Care and Social Assistance       | \$52,888       |
| Information and Culture Industries      | \$71,634       |
| Management of Companies and Enterprises | \$74,560       |
| Manufacturing                           | \$59,250       |
| Mining, Oil and Gas Extraction          | \$113,506      |
| Professional, Scientific, and Technical | \$76,077       |
| Public Administration                   | \$75,799       |
| Real Estate (Rental/Leasing)            | \$58,623       |
| Retail                                  | \$34,503       |
| Transportation and Warehousing          | \$61,011       |
| Utilities                               | \$101,531      |
| Wholesale Trade                         | \$67,456       |

b) Make a summary table under for each as follows: Fill in this paper.

|                          | Albert Pujols Homeruns | Canadian Job Salaries |
|--------------------------|------------------------|-----------------------|
| Count                    |                        |                       |
| Mean                     |                        |                       |
| Median                   |                        |                       |
| Mode                     |                        |                       |
| Minimum                  |                        |                       |
| Maximum                  |                        |                       |
| Range                    |                        |                       |
| Standard Deviation       |                        |                       |
| Low End of Normal Range  |                        |                       |
| High End of Normal Range |                        |                       |
| Years/Jobs Above Normal  |                        |                       |
| Years/Jobs Below Normal  |                        |                       |

c) Submit your spreadsheet to Edsby.