

# Making a Chart of Perfect Squares Through Perfect Fifths With Microsoft Excel

Mr. Clausen

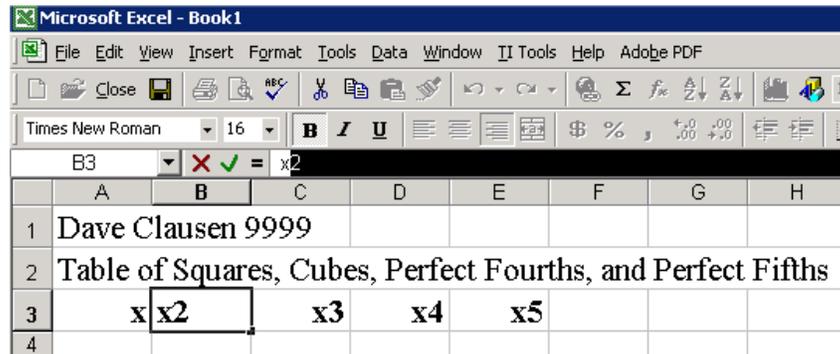
Algebra II

## STEP 1 Set up the spreadsheet

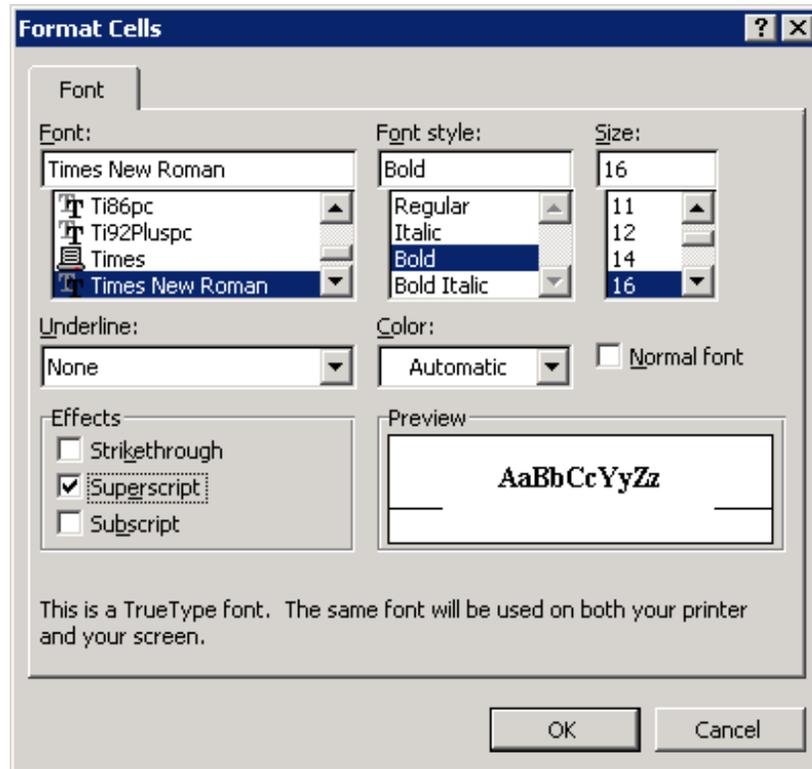
**WHAT TO DO:** Set up your Excel spreadsheet to make a chart of perfect squares, perfect cubes, perfect fourths, and perfect fifths.

|    | A  | B                    | C                    | D                    | E                    |
|----|--|----------------------|----------------------|----------------------|----------------------|
| 1  | Dave Clausen 9999  |                      |                      |                      |                      |
| 2  | Table of Squares, Cubes, Perfect Fourths, and Perfect Fifths |                      |                      |                      |                      |
| 3  | <b>x</b>   | <b>x<sup>2</sup></b> | <b>x<sup>3</sup></b> | <b>x<sup>4</sup></b> | <b>x<sup>5</sup></b> |
| 4  | 1  | 1                    | 1                    | 1                    | 1                    |
| 5  | 2  | 4                    | 8                    | 16                   | 32                   |
| 6  | 3  | 9                    | 27                   | 81                   | 243                  |
| 7  | 4  | 16                   | 64                   | 256                  | 1,024                |
| 8  | 5  | 25                   | 125                  | 625                  | 3,125                |
| 9  | 6  | 36                   | 216                  | 1,296                | 7,776                |
| 10 | 7  | 49                   | 343                  | 2,401                | 16,807               |
| 11 | 8  | 64                   | 512                  | 4,096                | 32,768               |
| 12 | 9  | 81                   | 729                  | 6,561                | 59,049               |
| 13 | 10   | 100                  | 1,000                | 10,000               | 100,000              |

1. Open Microsoft Excel. In cell A1, Type your Last Name, First Name and ID number. In cell A2 type: Table of Squares, Cubes, Perfect Fourths, and Perfect Fifths.
2. In cell A3, type **x**. In cell B3, type **x<sup>2</sup>**, in cell C3 type **x<sup>3</sup>**, in cell D3 type **x<sup>4</sup>**, and in cell E3 type **x<sup>5</sup>**.
3. Click on cell B3. In the Formula Bar, highlight the number 2 as shown below in black.



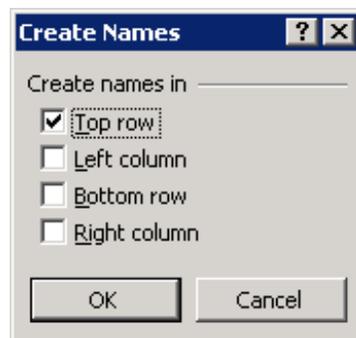
4. Go to the Format Menu and choose the first choice: Cells... Click on the check box Superscript as shown below. Click OK. This changes the label  $x^2$  into  $x^2$ .



5. Repeat this process for cells C3, D3, and E3 to create the labels for  $x^3$ ,  $x^4$ , and  $x^5$ .
6. In cell A4 type the number 1. In cell A5, type the number 2, and in cell A6, type the number 3.
7. Highlight cells A4 through A6 by clicking in the **middle** of cell A4 and dragging the mouse through cell A6.
8. With those cells still highlighted, click on the handle (+ sign) at the bottom right corner of cell A6 and drag down until you have generated the numbers 1 through 25 as shown below.

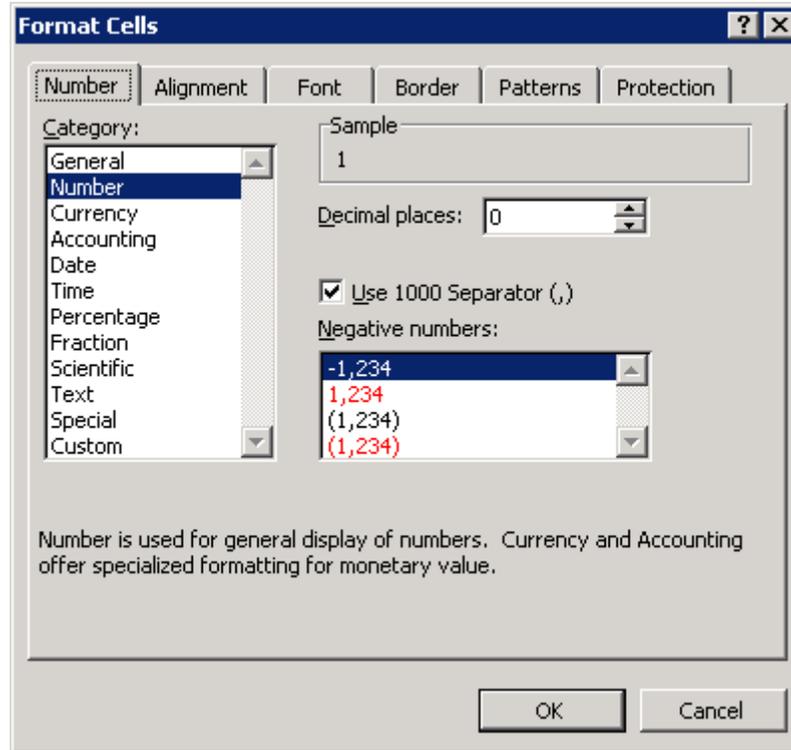
|    | A  | B              | C              | D              | E              | F | G | H |
|----|--|----------------|----------------|----------------|----------------|---|---|---|
| 1  | Dave Clausen 9999  |                |                |                |                |   |   |   |
| 2  | Table of Squares, Cubes, Perfect Fourths, and Perfect Fifths |                |                |                |                |   |   |   |
| 3  | x  | x <sup>2</sup> | x <sup>3</sup> | x <sup>4</sup> | x <sup>5</sup> |   |   |   |
| 4  | 1  |                |                |                |                |   |   |   |
| 5  | 2  |                |                |                |                |   |   |   |
| 6  | 3  |                |                |                |                |   |   |   |
| 7  |  |                |                |                |                |   |   |   |
| 8  |  |                |                |                |                |   |   |   |
| 9  |  |                |                |                |                |   |   |   |
| 10 |  |                |                |                |                |   |   |   |
| 11 |  |                |                |                |                |   |   |   |
| 12 |  |                |                |                |                |   |   |   |
| 13 |  |                |                |                |                |   |   |   |
| 14 |  |                |                |                |                |   |   |   |

9. Click in the middle of cell A3 and drag through cell A28. Press Control, Shift and the F3 at the same time. Make sure that there is a check in the check box **Top row** as shown below. Click OK to name all of these cells as “x”.

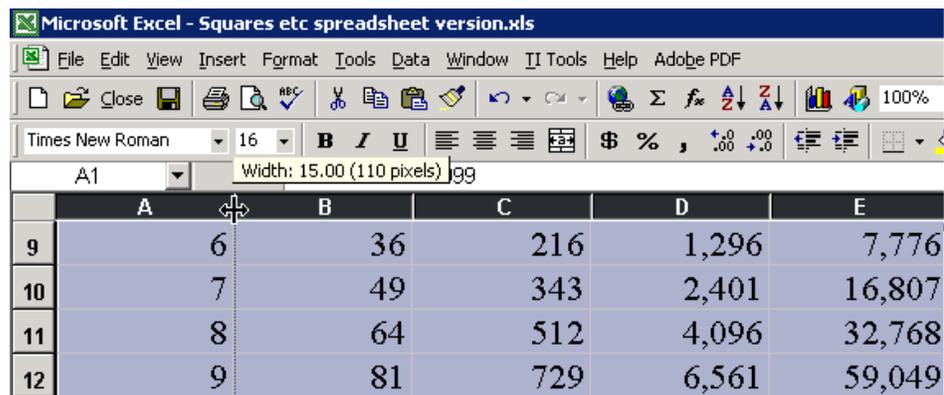


10. In cell B4 type the formula = x^2. In cell C4 type the formula = x^3. In cell D4 type the formula = x^4. In cell E4 type the formula = x^5. (The symbol ^ is found above the number 6 key at the top of the keyboard. It is the exponent symbol in Excel. The number to the left of the symbol is the base, while the number to the right of the symbol is the exponent.)
11. Click on cell B4, and move the mouse over the bottom right corner of the cell. The cursor changes into a smaller black plus sign ( + ) as shown in the picture above (step #8). Drag the handle down to copy the formulas until you reach row 28. Repeat this process for columns C, D, and E until you have your table of square, cubes, fourths, and fifths.
12. Click in cell A4 and drag through cell E28 to highlight all of your numbers. Go to the Format Menu, take the first choice: Cells.... Make sure that the **Number** Tab is Selected, click on Number in the

Category Text Box, Enter 0 (zero) for the number of decimal places to show, and click the check box Use 1000 Separator (,) to display commas in your numbers larger than 1000 as shown in the picture below. Click OK.



13. If at some point, the contents of your cells contain ##### instead of your numbers. This means that your cells are not wide enough to show the number. To make all of your columns the same width, and allow room to see all of your numbers, do the following. Click on the column names A and drag through the column name E. This should highlight all of your columns. Next click on the line between column A and column B in the column heading and drag the mouse to the right. This will widen all of the highlighted columns as shown below.



14. Customize your chart as you wish.

|    | A  | B                    | C                    | D                    | E                    |
|----|--|----------------------|----------------------|----------------------|----------------------|
| 1  | Dave Clausen 9999  |                      |                      |                      |                      |
| 2  | Table of Squares, Cubes, Perfect Fourths, and Perfect Fifths |                      |                      |                      |                      |
| 3  | <b>x</b>   | <b>x<sup>2</sup></b> | <b>x<sup>3</sup></b> | <b>x<sup>4</sup></b> | <b>x<sup>5</sup></b> |
| 4  | 1  | 1                    | 1                    | 1                    | 1                    |
| 5  | 2  | 4                    | 8                    | 16                   | 32                   |
| 6  | 3  | 9                    | 27                   | 81                   | 243                  |
| 7  | 4  | 16                   | 64                   | 256                  | 1,024                |
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| 11 | 8  | 64                   | 512                  | 4,096                | 32,768               |
| 12 | 9  | 81                   | 729                  | 6,561                | 59,049               |
| 13 | 10   | 100                  | 1,000                | 10,000               | 100,000              |
| 14 | 11   | 121                  | 1,331                | 14,641               | 161,051              |

15. Make sure that you save your work as LASTNAME FIRSTNAME Squares, and save this in your “S:” network directory. Do not save your work on the local hard drive “C:”!

16. When you are sure that everything is correct, and you have used formulas to calculate the tables, then **copy and paste your Excel file into the “W” directory**. Don’t use the File Menu and Save As... option, this will NOT save the entire file due to a conflict between Microsoft Excel and our Novell Server Software.