

## Excel Formulas

Here’s a brief cheat sheet for some of the formulas you’ll use often in Microsoft Excel. Refer to Figure 1 below for the examples. Remember: If in doubt, the help file is your friend. (Search the help file by “Excel Functions” to find an alphabetical list by category.)

Figure 1

|    | A             | B                | C                | D |
|----|---------------|------------------|------------------|---|
| 1  | <b>Name</b>   | <b>Last Year</b> | <b>This year</b> |   |
| 2  | Smith, Jerry  | \$35,000         | \$41,000         |   |
| 3  | Woodward, Jim | \$34,000         | \$39,000         |   |
| 4  | Perry, LeAnn  | \$42,000         | \$49,000         |   |
| 5  | Brown, Julia  | \$50,000         | \$59,000         |   |
| 6  | Jones, Scott  | \$45,000         | \$50,000         |   |
| 7  | Smith, Joe    | \$60,000         | \$67,000         |   |
| 8  | Hill, Mary    | \$70,000         | \$78,000         |   |
| 9  | Dale, Dee     | \$65,000         | \$72,000         |   |
| 10 |               |                  |                  |   |
| 11 |               |                  |                  |   |

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### SUM

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To add up the total of a range of data use this formula plugging in the cell reference at the beginning of the range and the cell reference at the end of the range. **=SUM(cell range)**

Figure 2

|    | A             | B                | C                |
|----|---------------|------------------|------------------|
| 1  | <b>Name</b>   | <b>Last Year</b> | <b>This year</b> |
| 2  | Smith, Jerry  | \$35,000         | \$41,000         |
| 3  | Woodward, Jim | \$34,000         | \$39,000         |
| 4  | Perry, LeAnn  | \$42,000         | \$49,000         |
| 5  | Brown, Julia  | \$50,000         | \$59,000         |
| 6  | Jones, Scott  | \$45,000         | \$50,000         |
| 7  | Smith, Joe    | \$60,000         | \$67,000         |
| 8  | Hill, Mary    | \$70,000         | \$78,000         |
| 9  | Dale, Dee     | \$65,000         | \$72,000         |
| 10 |               |                  |                  |
| 11 | Total         | =SUM(B2:B9)      |                  |

**AVERAGE**

To calculate the average we add up the values of all numbers and divide by the number of numbers we used to get that total. This is elementary math, but Excel will do it for us with the following formula:

**=AVERAGE(cell Range)**

**Figure 3**

|    | A             | B                | C                |
|----|---------------|------------------|------------------|
| 1  | <b>Name</b>   | <b>Last Year</b> | <b>This year</b> |
| 2  | Smith, Jerry  | \$35,000         | \$41,000         |
| 3  | Woodward, Jim | \$34,000         | \$39,000         |
| 4  | Perry, LeAnn  | \$42,000         | \$49,000         |
| 5  | Brown, Julia  | \$50,000         | \$59,000         |
| 6  | Jones, Scott  | \$45,000         | \$50,000         |
| 7  | Smith, Joe    | \$60,000         | \$67,000         |
| 8  | Hill, Mary    | \$70,000         | \$78,000         |
| 9  | Dale, Dee     | \$65,000         | \$72,000         |
| 10 |               |                  |                  |
| 11 | Total         | \$401,000        |                  |
| 12 | Average       | =average(b2:b9)  |                  |
| 13 |               |                  |                  |

**MEDIAN**

The median is the middle value. It is commonly used to report on home values or salaries. To find it we put all of the numbers in order and find the number that is in the middle. Excel uses this formula:

**=MEDIAN(cell range)**

**Figure 4**

|    | A             | B                | C                |
|----|---------------|------------------|------------------|
| 1  | <b>Name</b>   | <b>Last Year</b> | <b>This year</b> |
| 2  | Smith, Jerry  | \$35,000         | \$41,000         |
| 3  | Woodward, Jim | \$34,000         | \$39,000         |
| 4  | Perry, LeAnn  | \$42,000         | \$49,000         |
| 5  | Brown, Julia  | \$50,000         | \$59,000         |
| 6  | Jones, Scott  | \$45,000         | \$50,000         |
| 7  | Smith, Joe    | \$60,000         | \$67,000         |
| 8  | Hill, Mary    | \$70,000         | \$78,000         |
| 9  | Dale, Dee     | \$65,000         | \$72,000         |
| 10 |               |                  |                  |
| 11 | Total         | \$401,000        |                  |
| 12 | Average       | \$50,125         |                  |
| 13 | Median        | =median(b2:b9)   |                  |
| 14 |               |                  |                  |

**CHANGE**

This is one of the most basic calculations. When looking for the change or difference over time, take the new value minus the old value:

**=New – Old**

|   | A             | B                | C                | D             |
|---|---------------|------------------|------------------|---------------|
| 1 | <b>Name</b>   | <b>Last Year</b> | <b>This year</b> | <b>Change</b> |
| 2 | Smith, Jerry  | \$35,000         | \$41,000         | $= (c2 - b2)$ |
| 3 | Woodward, Jim | \$34,000         | \$39,000         |               |
| 4 | Perry, LeAnn  | \$42,000         | \$49,000         |               |
| 5 | Brown, Julia  | \$50,000         | \$59,000         |               |

**PERCENT CHANGE**

Use this formula and you'll never make a mistake calculating percent change. Remember to ask yourself if journalists typically like math – the answer should be “NOO” – you can see it at work in the formula below :

**=(New-Old)/Old**

Figure 5

|   | A             | B                | C                | D             | E                  |
|---|---------------|------------------|------------------|---------------|--------------------|
| 1 | <b>Name</b>   | <b>Last Year</b> | <b>This year</b> | <b>Change</b> | <b>%Change</b>     |
| 2 | Smith, Jerry  | \$35,000         | \$41,000         | \$6,000       | $= (c2 - b2) / b2$ |
| 3 | Woodward, Jim | \$34,000         | \$39,000         | \$5,000       |                    |

**PERCENT OF TOTAL**

This allows you to find out what percent of the entire amount is going to one person, category, department, etc. You find it by taking the piece and divide it by the entire amount:

**=Part/Whole**

\*This one is a bit tricky and you need to remember to “anchor” the cell containing the total value. If you don't, Excel will refer to the wrong cell once you copy the formula.

|    | A             | B                | C                | D             | E              | F             |
|----|---------------|------------------|------------------|---------------|----------------|---------------|
| 1  | <b>Name</b>   | <b>Last Year</b> | <b>This year</b> | <b>Change</b> | <b>%Change</b> | <b>%Total</b> |
| 2  | Smith, Jerry  | \$35,000         | \$41,000         | \$6,000       | 17.14%         | =b2/b\$11     |
| 3  | Woodward, Jim | \$34,000         | \$39,000         | \$5,000       | 14.71%         |               |
| 4  | Perry, LeAnn  | \$42,000         | \$49,000         | \$7,000       | 16.67%         |               |
| 5  | Brown, Julia  | \$50,000         | \$59,000         | \$9,000       | 18.00%         |               |
| 6  | Jones, Scott  | \$45,000         | \$50,000         | \$5,000       | 11.11%         |               |
| 7  | Smith, Joe    | \$60,000         | \$67,000         | \$7,000       | 11.67%         |               |
| 8  | Hill, Mary    | \$70,000         | \$78,000         | \$8,000       | 11.43%         |               |
| 9  | Dale, Dee     | \$65,000         | \$72,000         | \$7,000       | 10.77%         |               |
| 10 |               |                  |                  |               |                |               |
| 11 | Total         | \$401,000        |                  |               |                |               |
| 12 | Average       | \$50,125         |                  |               |                |               |
| 13 | Median        | \$47,500         |                  |               |                |               |
| 14 |               |                  |                  |               |                |               |