Count unique numeric values in a range

Generic formula

```
= SUM( -- (FREQUENCY(data,data) > 0))
```

Summary

To count unique numeric values in a range, you can use a formula based on the FREQUENCY and SUM functions. In the example shown, employee numbers appear in the range B5:B14. The formula in F5 is:

```
= SUM( -- (FREQUENCY(B5:B14,B5:B14) > 0))
```

which returns 4, since there are 4 unique employee ids in the list.

> With Excel 365, you can use a simpler and faster formula based on UNIQUE.

Explanation

Note: Prior to Excel 365, Excel did not have a dedicated function to count unique values. This formula shows a one way to count unique values, as long as they are numeric. If you have text values, or a mix of text and numbers, you'll need to use a more complicated formula.

The Excel FREQUENCY function returns a frequency distribution, which is a summary table that shows the frequency of numeric values, organized in "bins". We use it here as a roundabout way to count unique numeric values.

Working from the inside-out, we supply the same set of numbers for both the data array and bins array to FREQUENCY:

```
FREQUENCY(B5:B14,B5:B14)
```

FREQUENCY returns an array with a count of each numeric value in the range:

```
{4;0;0;0;2;0;1;3;0;0;0}
```

The result is a bit cryptic, but the meaning is 905 appears four times, 773 appears two times, 801 appears once, and 963 appears three times.

FREQUENCY has a special feature that automatically returns zero for any numbers that have already appeared in the data array, which is why values are zero once a number has been encountered.

Next, each of these values is tested to be greater than zero:

```
{4;0;0;0;2;0;1;3;0;0;0} > 0
```

The result is an array like this:

```
{TRUE;FALSE;FALSE;FALSE;TRUE;FALSE;TRUE;TRUE;FALSE;FALSE;FALSE}
```

Each TRUE represents a unique number in the list. The SUM ignores logical values by default, so we coerce TRUE and FALSE values to 1s and 0s with a double negative (--), which yields:

```
= SUM({1;0;0;0;1;0;1;1;0;0;0})
```

Finally, SUM adds these values up and returns the total, which in this case is 4.

Note: you could also use SUMPRODUCT to sum the items in the array.

Using COUNTIF instead of FREQUENCY to count unique values

Another way to count unique numeric values is to use COUNTIF instead of FREQUENCY. This is a simpler formula, but beware that using COUNTIF on larger data sets to count unique values can cause performance issues. The FREQUENCY formula, while more complicated, calculates much faster.