Rounding Functions – Controlling the Precision

In producing mathematical answers, Microsoft Excel uses formula or fractional math. This means that the program tries to keep the integrity of the **EXACT** answer. As a result, Excel calculates answers to the 15th decimal place. This has little effect on whole number answers like 2, because 2 is a 2 no matter how many zeros are behind the decimal. However if your calculation includes multiplying by a decimal to calculate fringe or displaying a monetary value, the decimal places in the answer can affect your results.

Excel has a family of round functions; which all work the same, but change the precision (number of decimal places) to meet your needs.

> The **ROUND** function rounds a number to a specified number of digits.
> **=ROUND(NUMBER, NUM_DIGITS)**
> - **NUMBER:** The number that you want to round
> - **NUM_DIGITS:** The number of digits to which you want to round the number argument. A positive number indicates places after the decimal. A negative number indicates places before the decimal.

Examples:

Formula	Result WO/ ROUND	Result W/ ROUND	Description
ROUND(3215*0.0145,0)	46.6175	47	Round FICA calculation to a whole number.
ROUNDUP(10.20*2088,0)	21297.6	21298	Rounds up to budget for hourly salary.
ROUNDDOWN(32845/2088,2)	15.7303639846743	15.73	Rounds down to hourly rate given an annual budget.
ROUNDUP(4*15*16*8.52,-2)	8179.2	8200	Rounds up to closest hundred to estimate 4 student assistants working 15 hours per week for 16 weeks at $8.52 per hour.

Rounding Function Family:

FUNCTION	DESCRIPTION
ROUND(number, num_digits)	Rounds a number to a specified number of decimal places.
ROUNDUP(number, num_digits)	Rounds a number up to the specified number of decimal places.
ROUNDDOWN(number, num_digits)	Rounds a number down to the specified number of decimal places.
EVEN(number)	Rounds a number up to the next highest even integer.
ODD(number,)	Rounds a number up to the next highest odd integer.
INT(number,)	Rounds a number down to the nearest integer.
TRUNC(number, num_digits)	Truncates a number to the specified number of decimal places by removing digits of lesser precision.