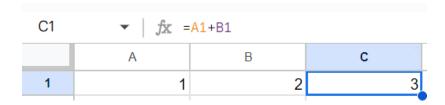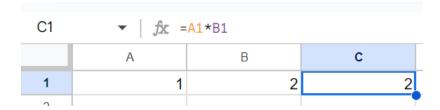## How to input a formula

- All formulas start with the "=" sign
- Once you are typing in a formula click on the cell you want to input instead of typing in the number. By doing this you can simply change the number later and the entire formula will adjust.
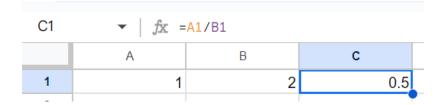
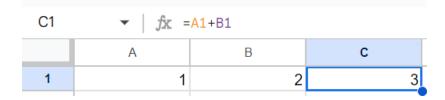| C1	▼	*fx* =A1+B1	
	A	B	C
1	1	2	3

Basic functions

- Multiplication
  - use the "*" symbol in between two inputs in order to multiply them together

C1	▼	*fx* =A1*B1	
	A	B	C
1	1	2	2

- Division
  - use the "/" symbol in order to divide them

C1	▼	*fx* =A1/B1	
	A	B	C
1	1	2	0.5

- Addition
  - use the "+" symbol in order to add them

C1	▼	*fx* =A1+B1	
	A	B	C
1	1	2	3

- Converting from degrees to radians

- the "=radians" function to convert from degrees to radians

A1	▼	*fx* =radians(90)	
	A		B
1	1.570796327		

- Sine/cosine/tangent
  - google sheets defaults to radians. Your formulas will need to convert degrees to radians.
    - Sine is "=sin(inputanglehere)"
    - Cosine is "=cos(inputanglehere)"
    - Tangent is "=tan(inputanglehere)"
- Inverse Trig Functions:
  - To find an angle if you know the opposite and adjacent legs of the triangle are 3 and 4, respectively, use "=atan(3/4)"
  - To find that angle in degrees, you will need to convert this output to degrees, since sheets works in radians. Like this… "=degrees(atan(3/4))
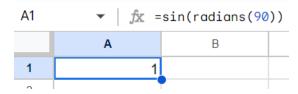 - The other basic inverse functions are "asin" and "acos"

A1	▼	*fx* =sin(0)
	A	B
1	0	

- Exponents
  - Use the "^" symbol to raise something to a power
  - If you're taking a square root, you can use either "^.5" or "sqrt()"

B1	▼	*fx* =A1^2	
	A		B
1		2	4

Formulas with multiple functions

- Stack multiple functions into one formula. Remember to use parentheses when appropriate.
  - Example - =sin(radians(90)) will convert 90 degrees into radians and then find the sine of that angle

A1	▼	*fx* =sin(radians(90))
	A	B
1	1	

Formulas with flexible cells vs formulas with

- Sheets will move cell inputs when copying and pasting formulas elsewhere. Sometimes this is useful and sometimes it is not.
- To "lock in" a formula into a graph use the "$" symbol before the letter and number of a cell
    - Example - "A1" means google sheets will always use the A1 cell in your calculation whenever

If the formula to the right is copied and pasted one cell down, google sheets will also move the A1 input down as well, resulting in A2 being used in the formula.

B1	▼	fx =A1+1
	A	B
1	1	2

If the formula to the right is copied and pasted one cell down, google sheets will still keep the A1 cell as part of the formula.

B1	▼	fx =A1+1
	A	B
1	1	2

How to make a graph

- Highlight the data you wish to graph then click the "insert" button at the top of the sheet. Finally, click "chart" on the drop down menu.
- Whatever is in the left hand column google sheets will treat at the independent variable. The columns to the right will be treated as the dependent variables.