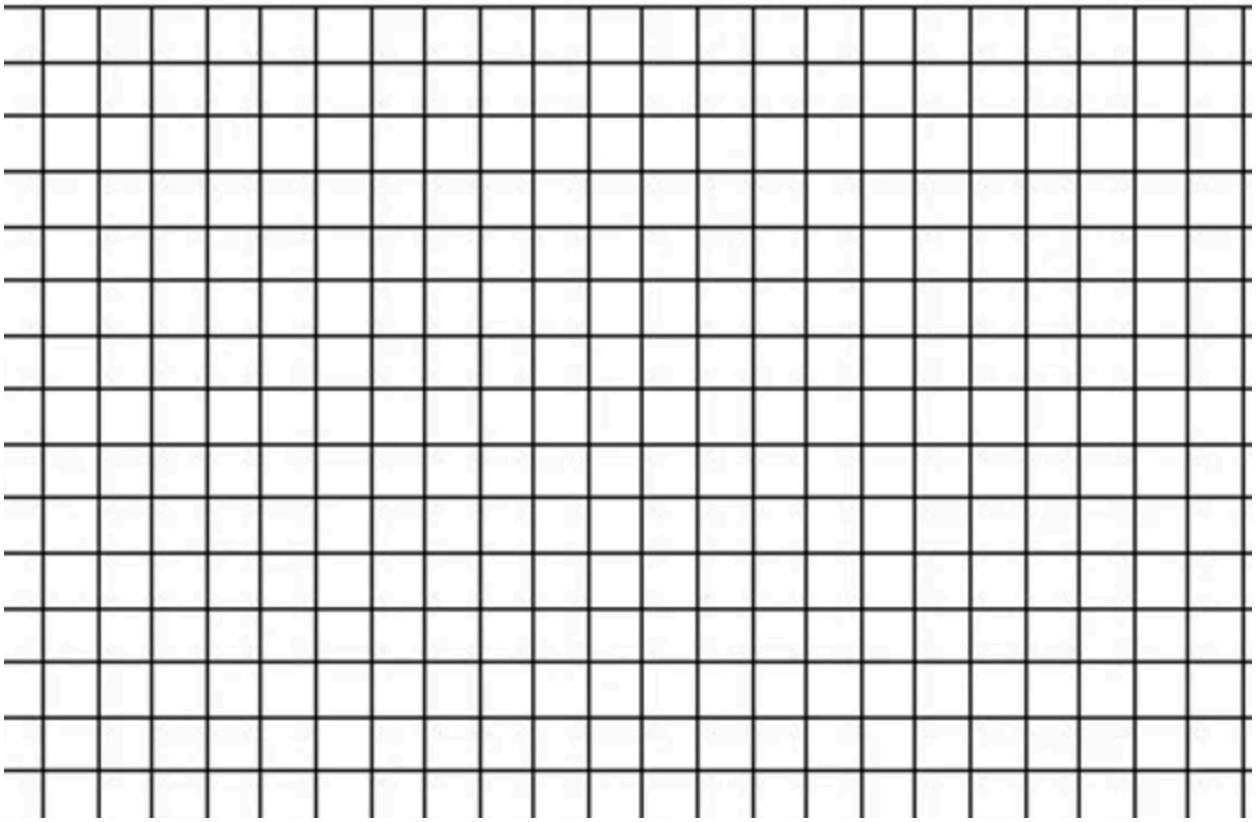
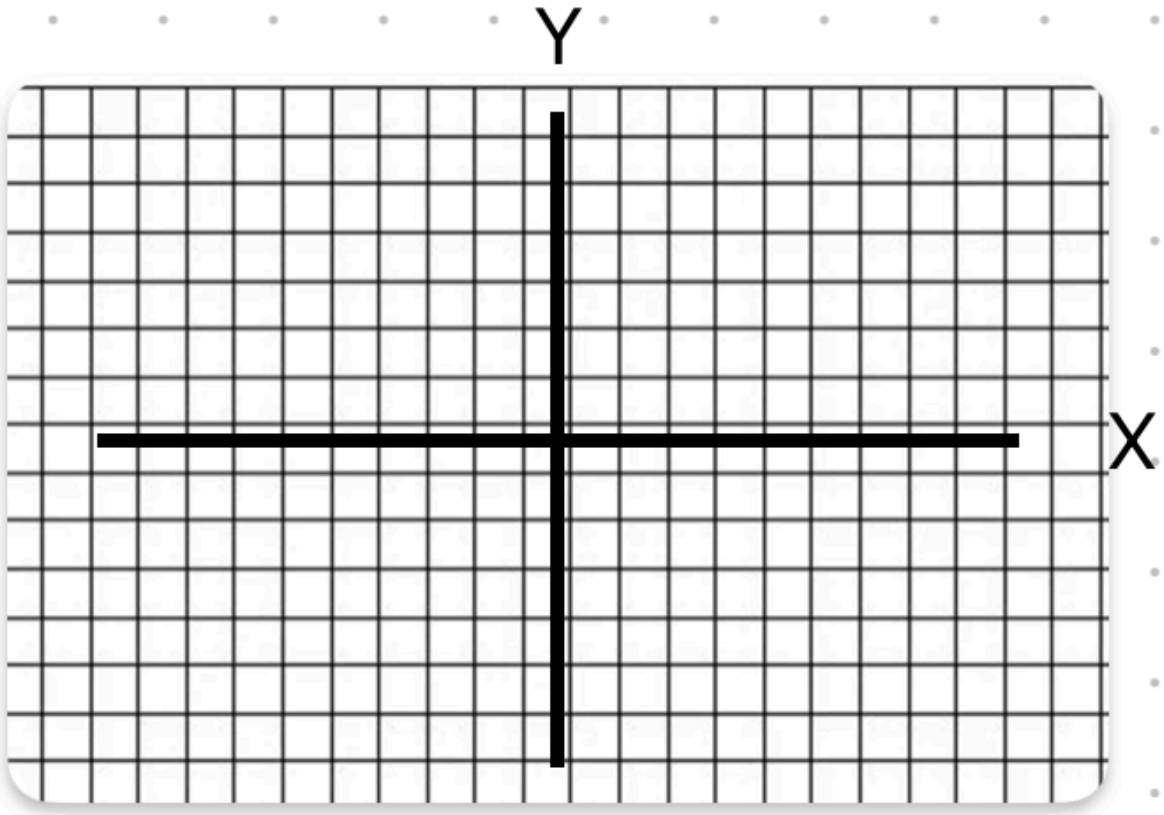
How to Graph:



Step 1: Construct the *xy* grid on your paper. This is a good thing to always do. It helps break the writer's block.



Step two: plot your function or points.

Consider: $y = x^2$.

This is the ***parent function*** of the *quadratic* equation. If we add terms or coefficients, then we get a modification thereof.

For example: $y = 3x^2 + 5$ has the additional term of 5 and a 3 inserted as a *constant* ***coefficient*** in front of our *independent variable*, *x*.

If $x = 1$, then $y = 8$. $8 = 3*(1)^2 + 5$.

If $x = 2$, then $y = 17$. $17 = 3*(2)^2 + 5$.

If $x = -1$, then $y = 8$, again. $8 = 3*(-1)^2 + 5$.

Also: $8 = 3*(-1)*(-1) + 5$.

Note: $(-1)^3 = (-1)*(-1)*(-1) = -1$.

Please Complete the table:

x / *y*
(1 , 8)
(2 , 17)
(-1 , 8)
(3 ,)
(0 ,)
(-2 ,)

x / *y*
(4 ,)
(5 ,)
(6 ,)
(-3 ,)
(-4 ,)
(-5 ,)

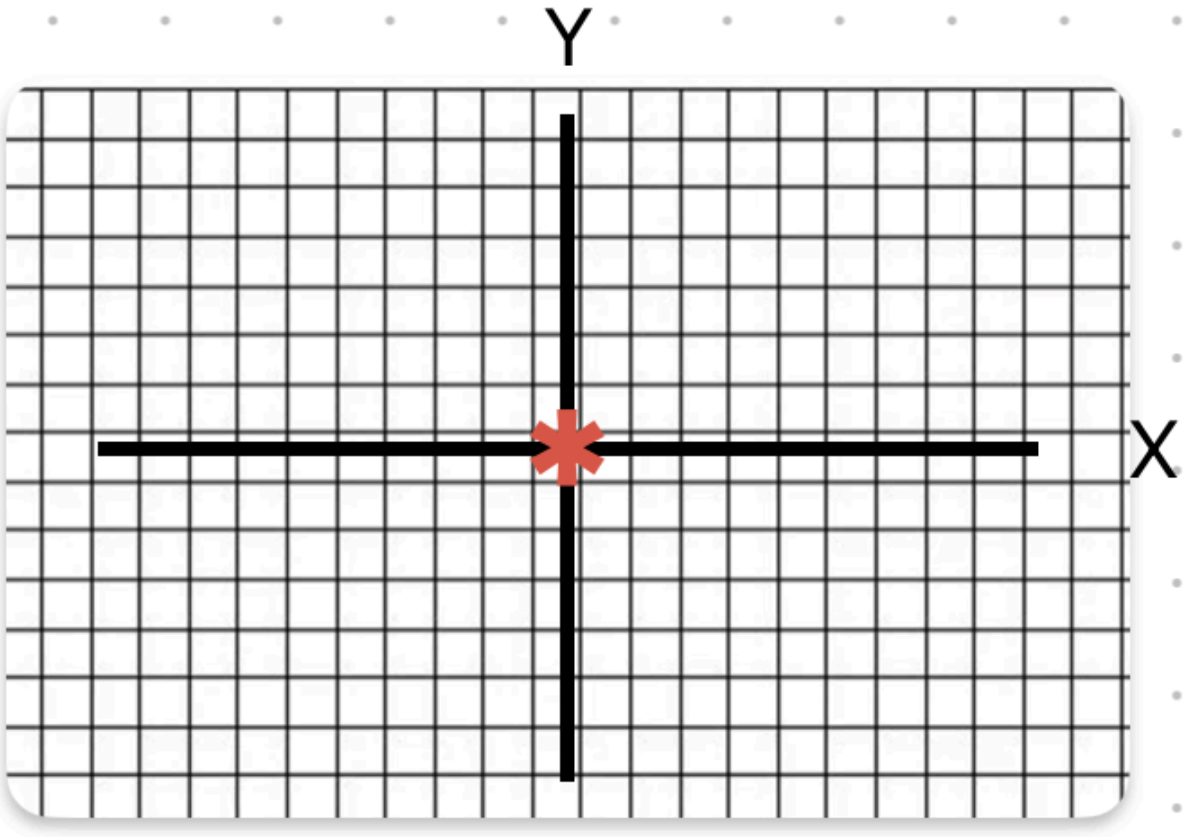
Table continued. Please write points as *ordered pairs*. The format is (,) . So just fill in the number.

Step 3: Good we have our table complete,

Now, start at the ***origin***. This is at the perpendicular intersection of the *x* and *y* axis. It is labeled with a red star.

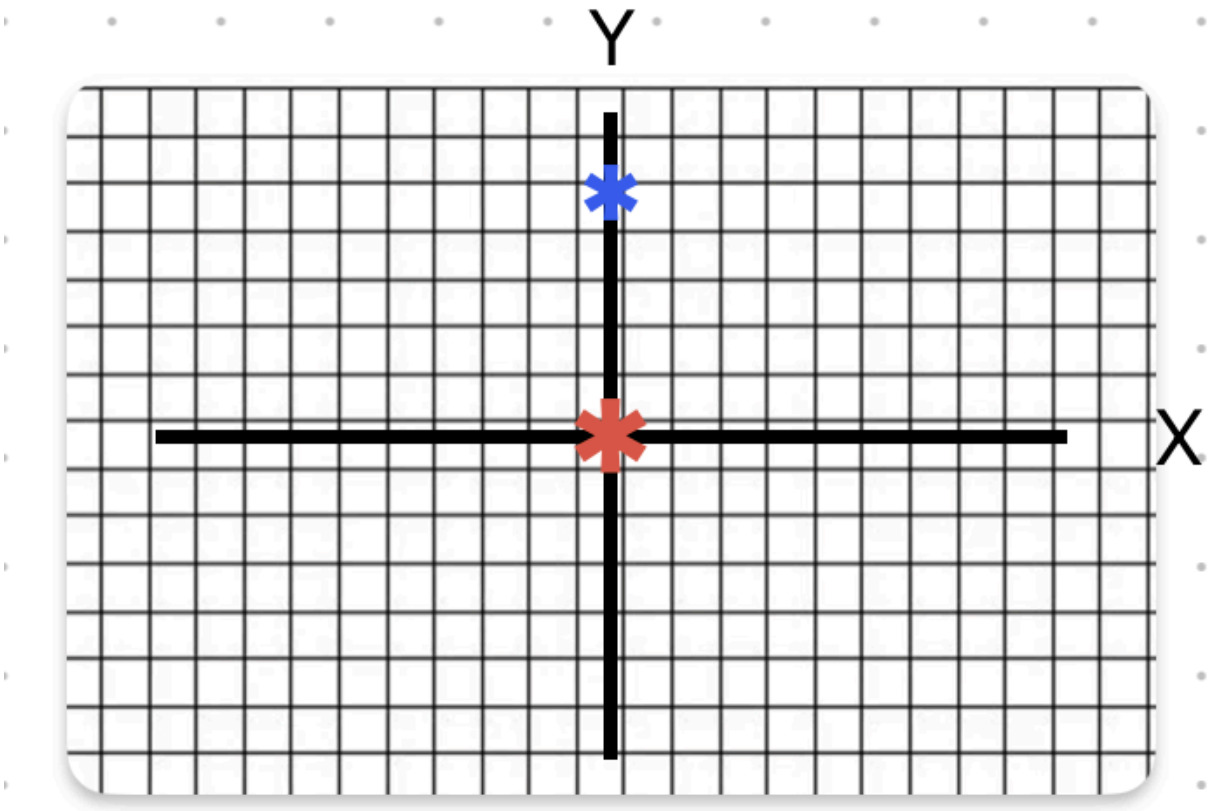
The coordinate is (0 , 0) .

(The parenthesis and comma are important.)



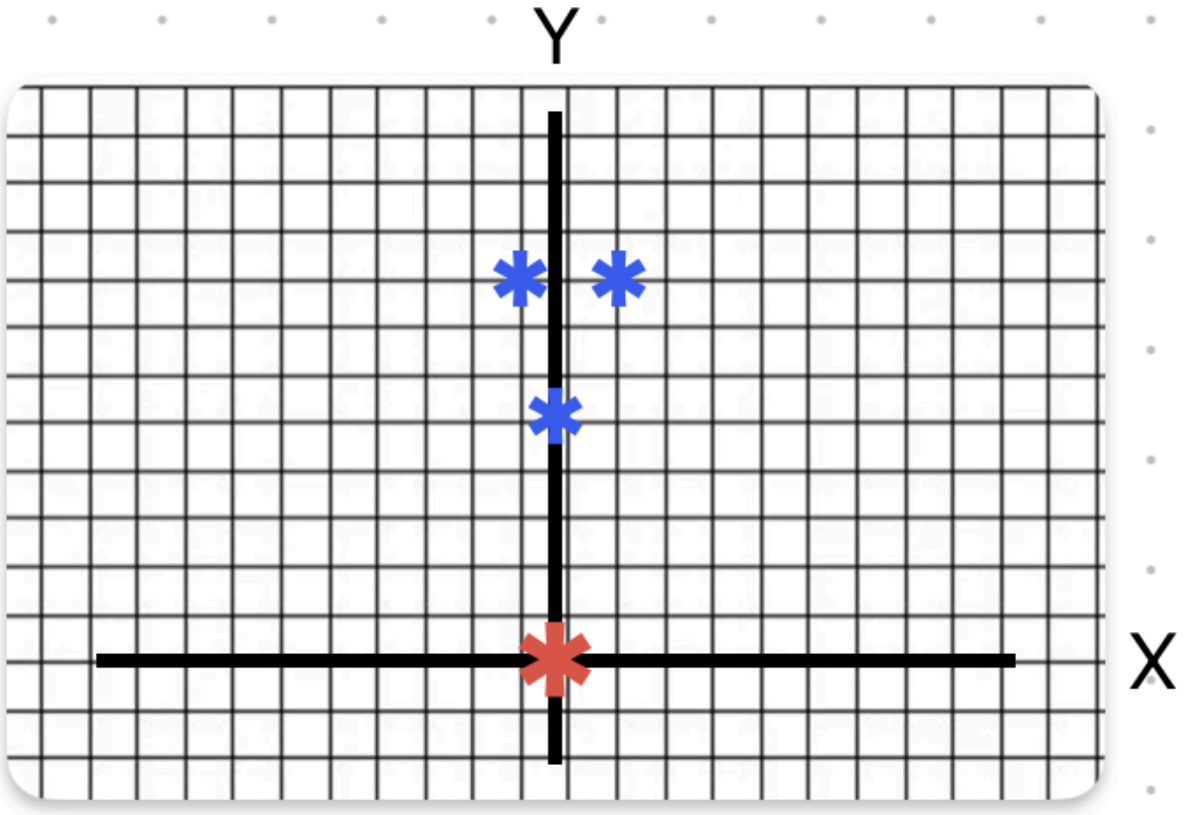
If we plot (0 , 5) , we march over 0 to the left and 0 to the right, actually. So next, we just march up 5 and land at the blue star.

We always figure out left or right first, and then up and down.



We can insert more stars.

I adjusted the zoom.



Exercise:
Connect the dots, with a “curved” graph.

Tell us the coordinates of the blue stars.

Try a graph for yourself on the first page.