Number Patterns in the Coordinate Grid

In this lesson, we will study rules that connect the two coordinates x and y of a point.

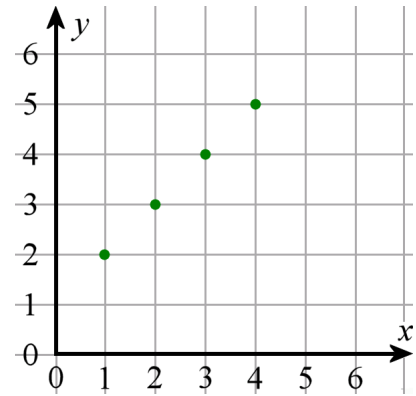**Example 1.** The table lists the coordinates of four points:

x	1	2	3	4
y	2	3	4	5

These number pairs (1, 2), (2, 3), (3, 4), and (4, 5) are <u>four points</u> on the coordinate grid (see the image).

Also, there is a <u>connection</u> between each x and y coordinate. This connection, or rule, is: **y is 1 more than x**. That rule is true for *each* of the four points.
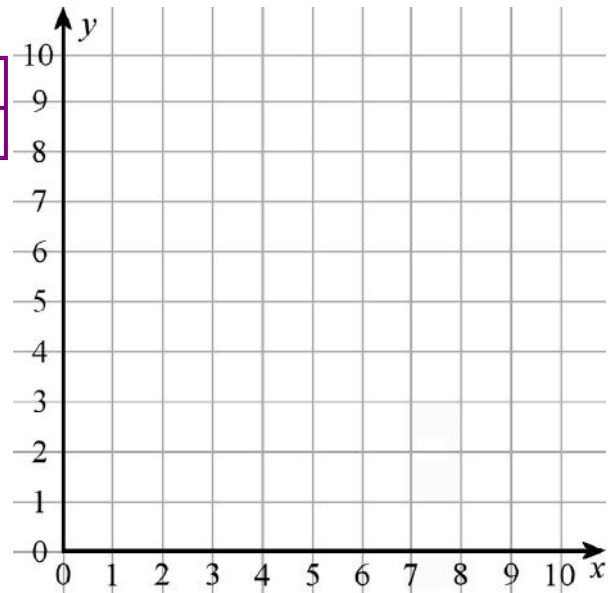
We can also write this with symbols: **$y = x + 1$**.

1. Plot the points from the "number rules" or number patterns on the coordinate grids.

a.

x	0	1	2	3	4	5	6
y	3	4	5	6	7	8	9

The rule is: $y = x + 3$.

b.

x	0	1	2	3	4	5	6
y	6	5	4	3	2	1	0

The rule is: x and y always add up to 6.
In other words, $x + y = 6$.