

Video Notes: Parallel Lines

Given our recipe:

1 unit right & 2 units up.

For any point on our line, if we've gone r units right, then by necessity we will have gone twice that, or $2r$, units up.

If we call the up units, u , then we have:

$$u = 2r$$

And, if we started b units up the page on the left side of the page, then for any point on the line:

$$u = b + 2r$$

or equivalently:

$$u = 2r + b$$

Now if we call the amount right x , and the amount up y , we have:

$$y = 2x + b$$

Finally, there wasn't actually anything that special about 2. If instead we look at a line and every time we go 1 unit right, we go m units up, then we end up with:

$$y = mx + b$$

This is our traditional formula for a line, where b is the point on the y -axis (the up/down axis), that the line crosses, and m is the slope.

Alright, now remember those stretching monsters? And maybe you noticed the only way for them not to bump into each other was to align arms in the same direction, ie same m 's ... we have a special name for such lines with the same slope. We call them **PARALLEL**.