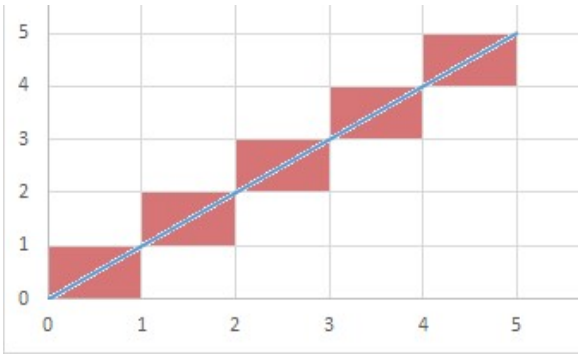
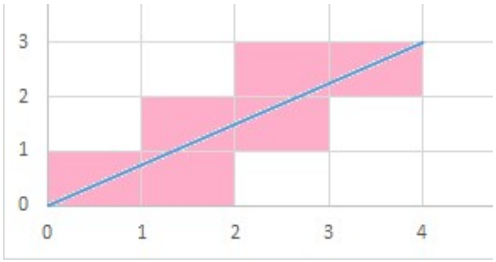
Beelines

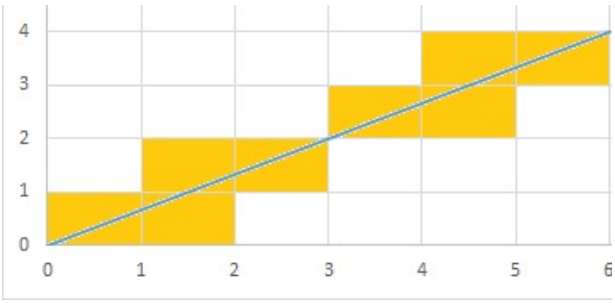
If I join the points **(0, 0)** and **(5, 5)** the line segment passes through **five** grid squares.





If I join the points **(0, 0)** and **(4, 3)** the line segment passes through **six** grid squares.

If I join the points **(0, 0)** and **(6, 4)** the line segment passes through **eight** grid squares.



Can you find a relationship between the coordinates of the end of the line segment and the number of squares it passes through?

If I draw the line segment joining the origin to the point (50, 37) how many grid squares will it pass through?

If I draw the line segment joining the origin to the point (96, 72) how many grid squares will it pass through?

Can you find a line segment that passes through exactly 24 squares? Can you find more than one?

Can you work out how many grid squares a line segment passes through, if you are given the coordinates of the two endpoints, where neither is at the origin?