

Draw two grids like this in your book, then use one for each of the following questions.

- 1) a)** Here are the coordinates of three vertices of a parallelogram where the secret agent found evidence. Plot these on your first grid. Remember to label each vertex.

Vertex **A**: $(-1, 2)$

Vertex **B**: $(-3, -2)$

Vertex **C**: $(2, -2)$

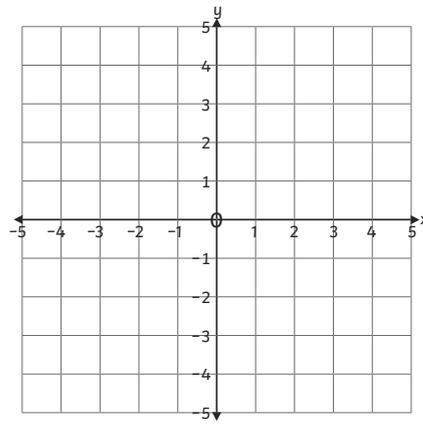


- b)** Now plot vertex D, labelling its coordinates on the grid.
- c)** Complete the drawing of the parallelogram to show where the evidence was found.

- 2)** The secret agent needs to draw two congruent isosceles triangles on a grid for surveillance. Here are some of the coordinates of the vertices of both triangles.

$(-1, 4)$ $(1, 4)$ $(5, 4)$ $(-3, -4)$

- a)** Plot the above coordinates on your second grid.
- b)** Use these coordinates to help you plot the missing vertices of each isosceles triangle. Then, draw each triangle on the grid so that the secret agent can complete her route.



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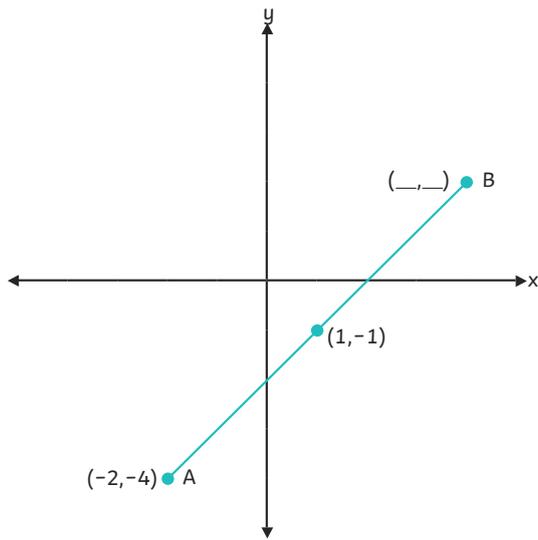
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- 1) Alfie, the secret agent, is solving this problem to establish where fingerprint B was found. If the coordinates $(1, -1)$ are the midpoint between A and B, what are the coordinates of B?

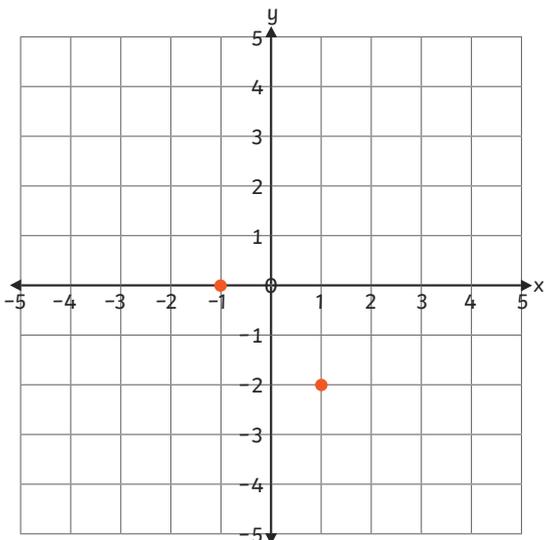


In order to find the coordinates of point B, I will just need to double the coordinates of A. I think the coordinates of B must be $(-4, -8)$.



Is Alfie correct?
Explain your reasoning.

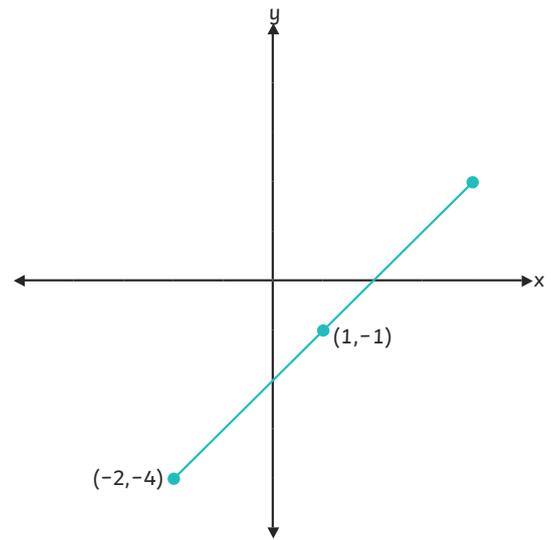
- 2) Halim, the secret agent, is plotting the missing vertices to complete this square of where clues were found.



He thinks he needs to plot the coordinates $(-2, -3)$ and $(-4, -1)$ but his partner Olivia thinks he needs to use $(-3, -2)$ and $(-1, -4)$.

- Explain which secret agent is correct.
- Copy the grid and complete the drawing of the square for the detectives.

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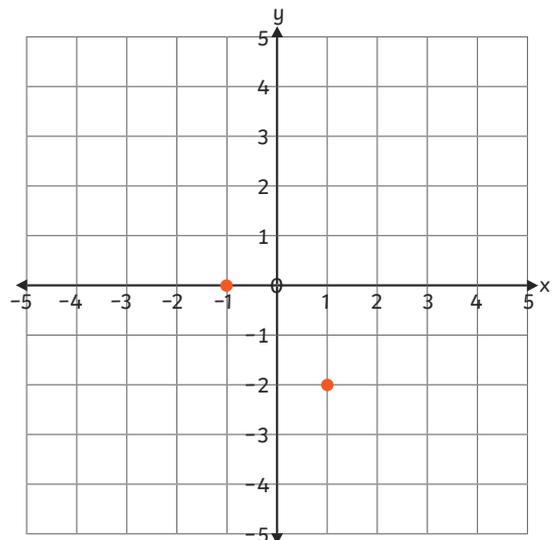


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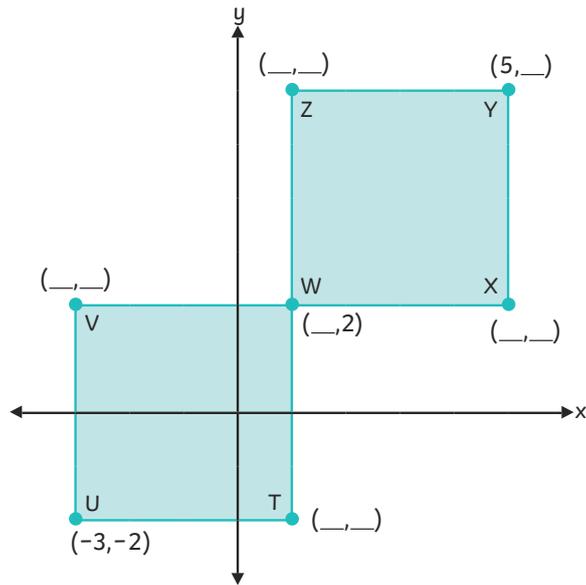
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- 1) The secret agent needs to describe these hidden locations to his team.



He has drawn two congruent squares on this four-quadrant coordinate grid.

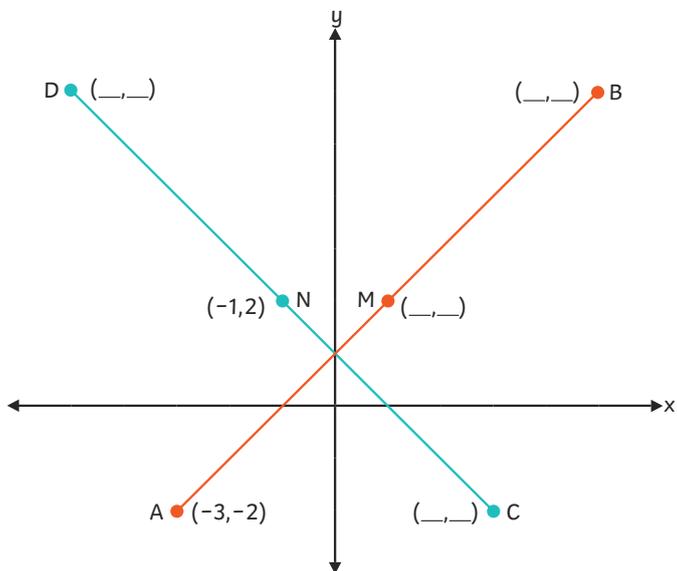
Identify the missing coordinates.



- 2) Lines AB and CD are congruent.

M and N are the midpoints of each line, where important fingerprints were found.

Use the information on the coordinate grid to find the missing coordinates to show where the fingerprints were detected.

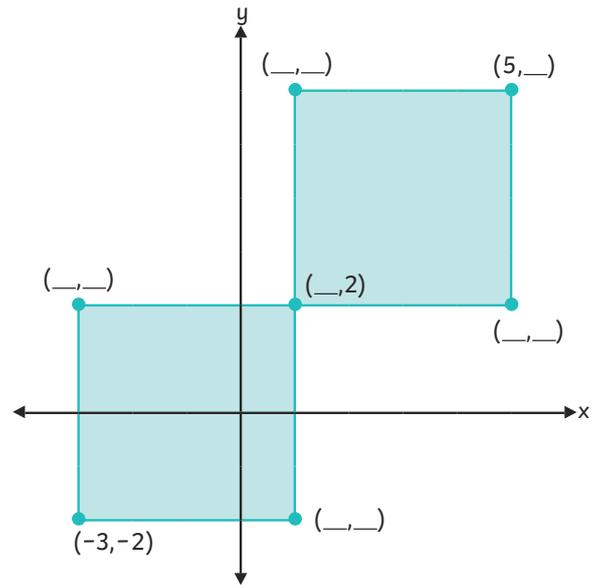


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