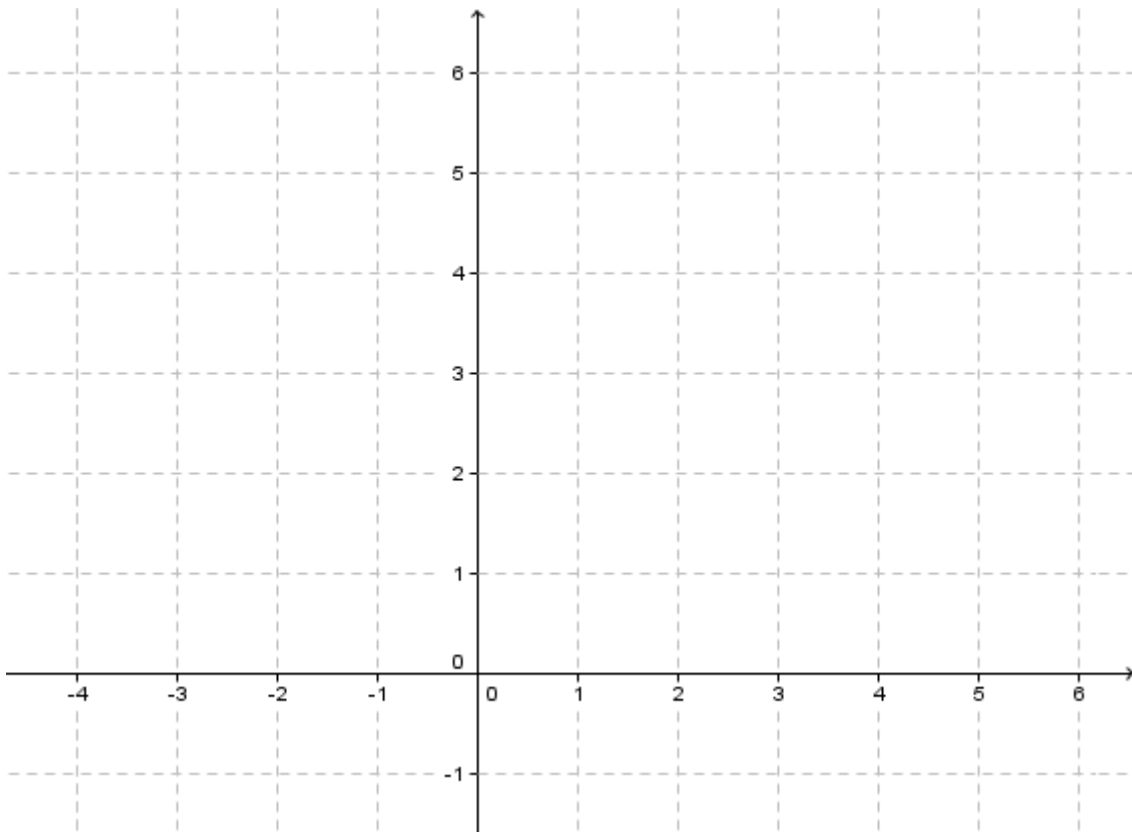


Midpoints



1. Plot and label the following coordinates on the graph above:

A	(5,5)
B	(1,3)
C	(3,1)
D	(-1,1)

2. Draw onto your graph the following segments: AB, BC, CD

3. Find the coordinates of the midpoint of each of these line segments:

AB	
BC	
CD	

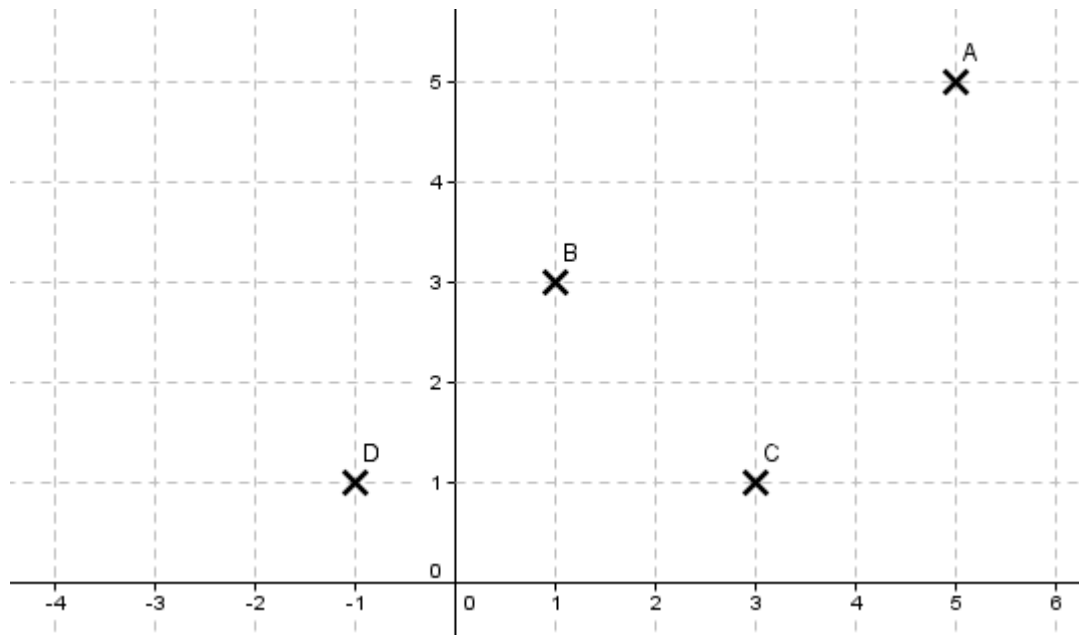
4. Compare the coordinates of the midpoints to the coordinates of the original points. What do you notice?

5. Using this idea, calculate *without using the graph* the position of the midpoint of the line segment AC:

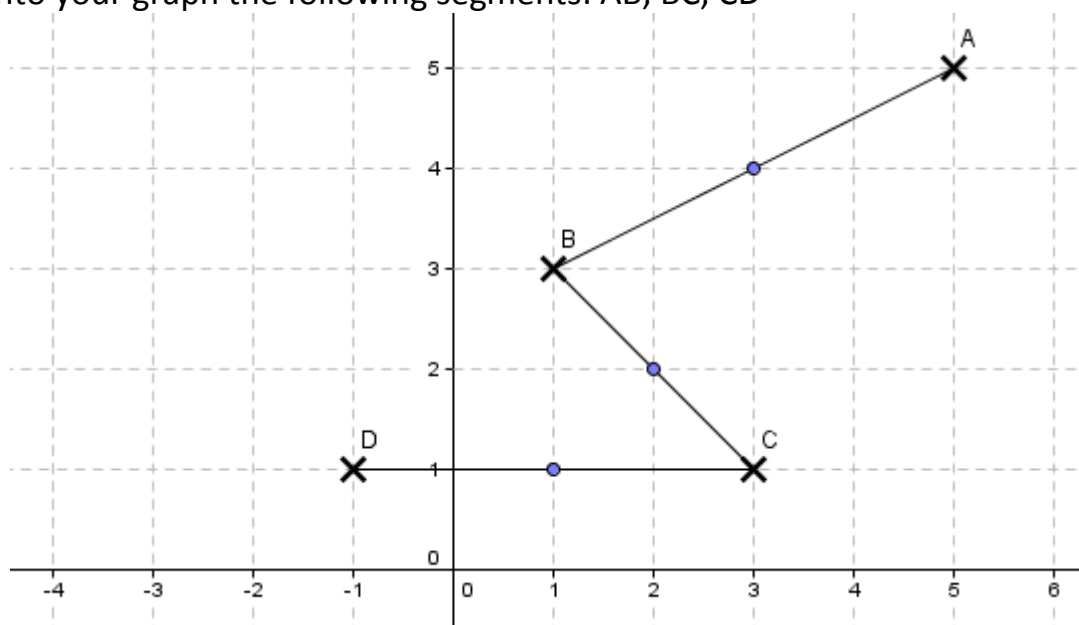
6. Finally, check your answer by drawing the line segment AC on your graph and plotting the midpoint.

Midpoints SOLUTIONS

1.



2. Draw onto your graph the following segments: AB, BC, CD



3. Find the coordinates of the midpoint of each of these line segments:

AB	(3,4)
BC	(2,2)
CD	(1,1)

4. Compare the coordinates of the midpoints to the coordinates of the original points. What do you notice?

The x coordinate of the midpoint is the average of the x coordinates of the original points.
The y coordinate of the midpoint is the average of the y coordinates of the original points.

5. Using this idea, calculate *without using the graph* the position of the midpoint of the line segment AC:

$$A: (5,5) \quad C: (3,1) \Rightarrow \text{Avg } x: \frac{5+3}{2} = \frac{8}{2} = 4 \quad \text{Avg } y: \frac{5+1}{2} = \frac{6}{2} = 3 \Rightarrow (4,3)$$

6. Finally, check your answer by drawing the line segment AC on your graph and plotting the midpoint.