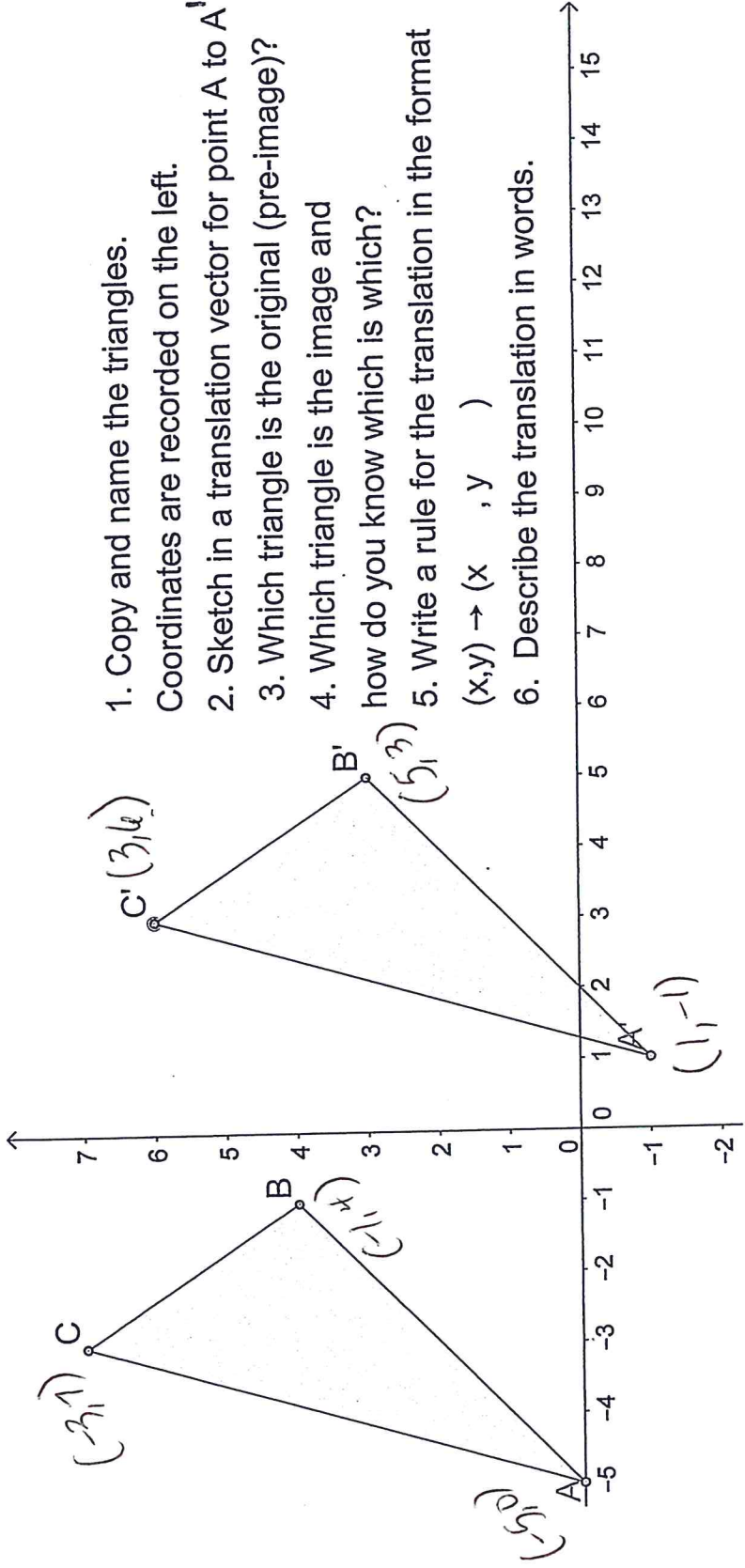


Sheet of graph paper  
 Title a ~~part~~ "Investigations"

# Transformation Investigation 1 (4 minutes)

- Copy and name the triangles. Coordinates are recorded on the left.
- Sketch in a translation vector for point A to A' (p 112, bottom)
- Which triangle is the original (pre-image)?
- Which triangle is the image and how do you know which is which?
- Write a rule for the translation in the format  $(x,y) \rightarrow (x',y')$
- Describe the translation in words.



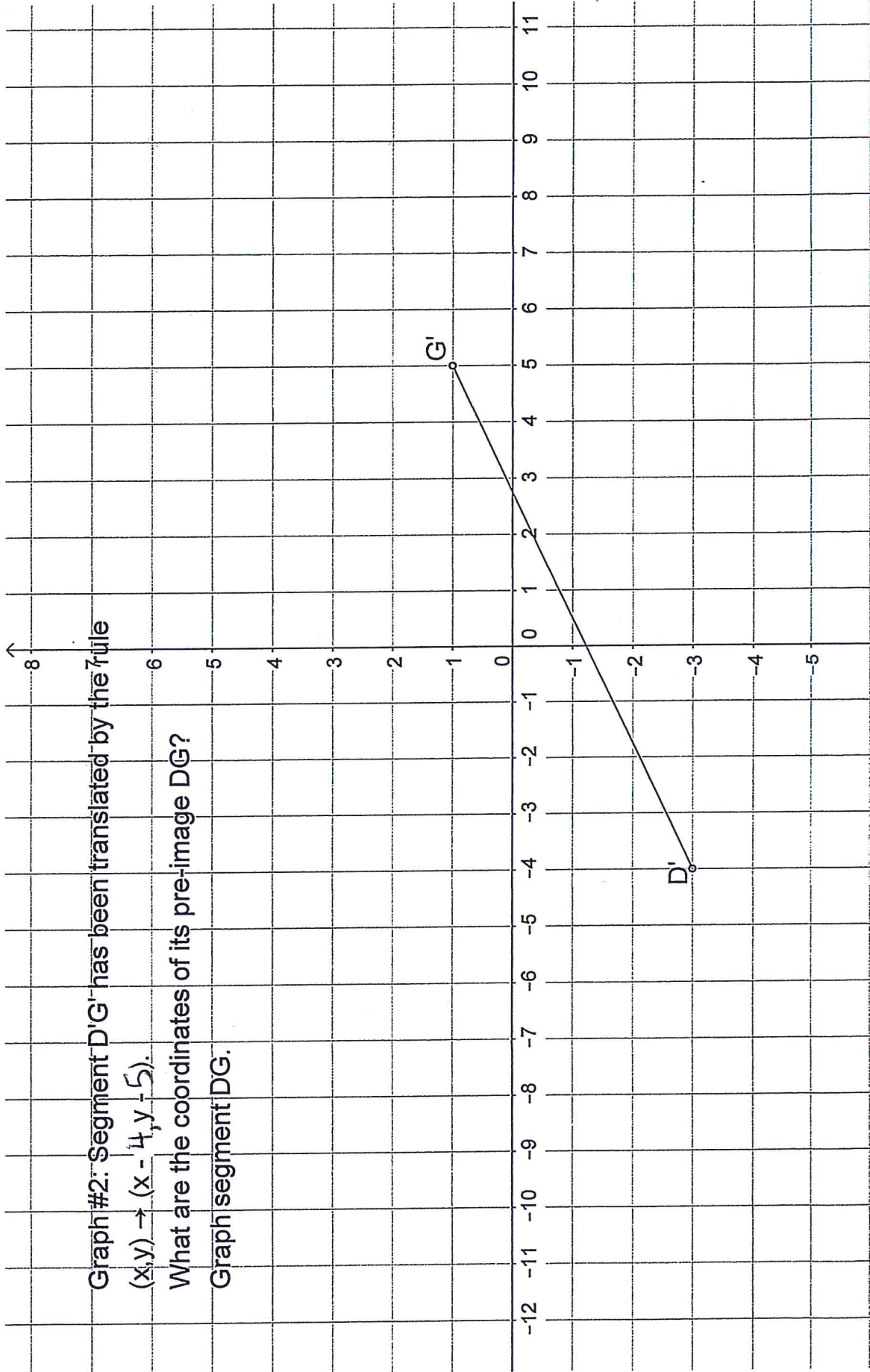
# Translation Investigation 2

Graph #2: Segment D'G' has been translated by the rule

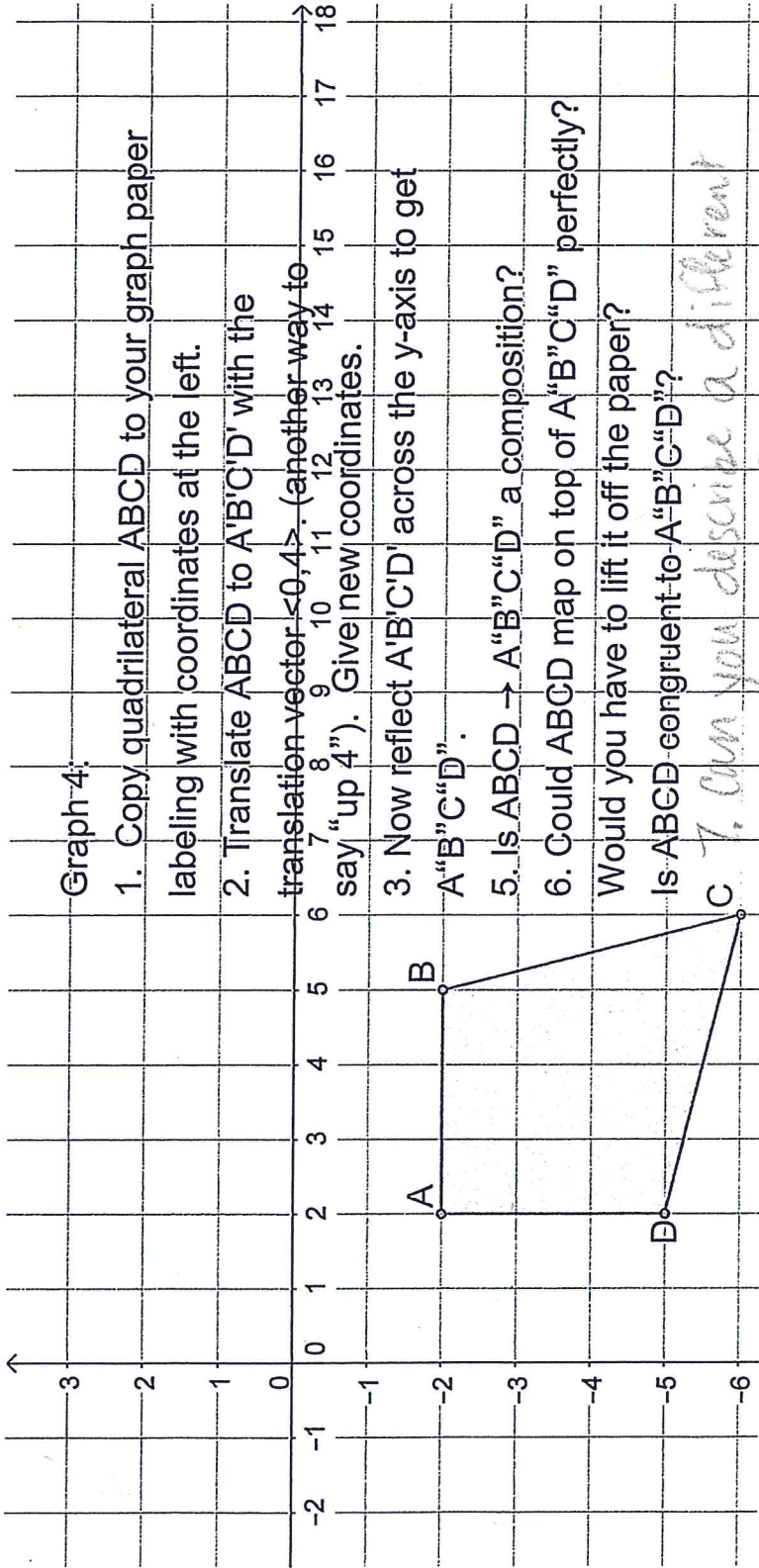
$$(x, y) \rightarrow (x - 4, y - 5).$$

What are the coordinates of its pre-image DG?

Graph segment DG.



# Translation Investigation 4



Graph 4:

1. Copy quadrilateral ABCD to your graph paper labeling with coordinates at the left.

2. Translate ABCD to A'B'C'D' with the translation vector  $\langle 0, 4 \rangle$ . (another way to say "up 4"). Give new coordinates.

3. Now reflect A'B'C'D' across the y-axis to get A''B''C''D''.

5. Is ABCD  $\rightarrow$  A''B''C''D'' a composition?

6. Could ABCD map on top of A''B''C''D'' perfectly?

Would you have to lift it off the paper?

Is ABCD congruent to A''B''C''D''?

7. Can you describe a different "route" to get from ABCD to A''B''C''D''?

Is the original  $ABCD \cong LMNO$ ?  
Justify by a sequence of rigid  
transformations, if so.

