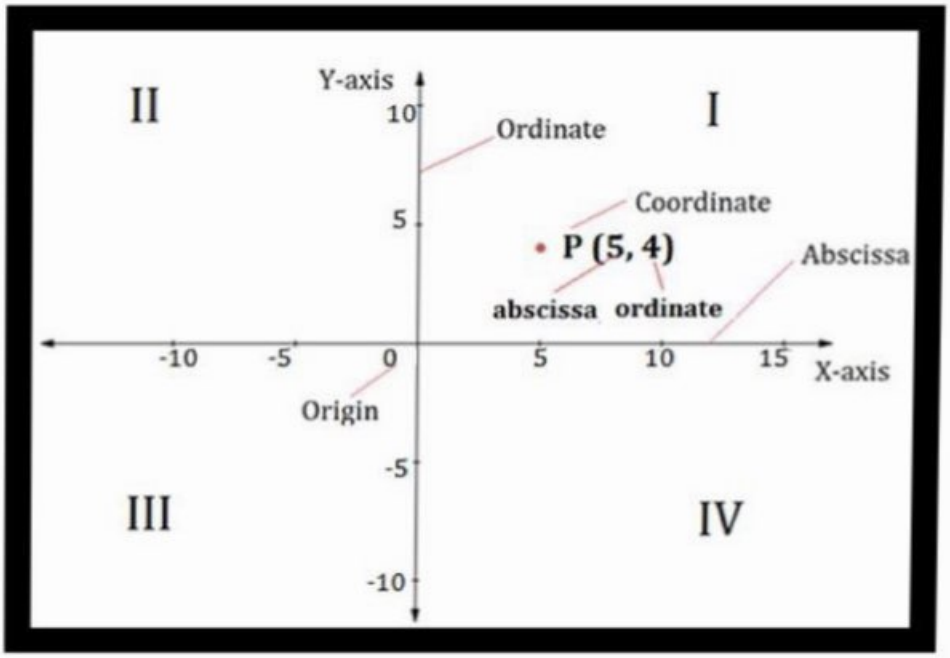
SAT PAUL MITTAL SCHOOL

SESSION- 2020-2021

MATHS PROJECT

CO-ORDINATE GEOMETRY



submitted by-

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submitted to: Ms. Amandeep Kaur

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Acknowledgment

I would like to express my special thanks of gratitude to my teacher Ms. Amandeep Kaur as well as our principal Ms. Bhupinder Gogia who gave me the golden opportunity to do this wonderful project on the topic, "Co-ordinate geometry", which also help me in doing a lot of research and I came to know about so many new things. I am really thankful to them.

Secondly, I would also like to thank my parents and friends who helped me a lot in finalizing this project within the limited time frame.

Remarks

Teacher's Sign.

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Introduction

Reflection :- In geometry, a reflection is known as a flip. A reflection is the mirror image of the shape. An image will reflect through a line known as the line of reflection. A figure is said to be the reflection of the other figure when every point in a figure is equidistant from each corresponding point in the other figure. The reflected image should have the same shape and size but the image faces the other direction. In reflection, translation may also take place because of its chages in position Here, the original image is called pre-image and its reflection is called ~~pre~~-image. The representation of pre image and image are ABC and A'B'C' respectively. The reflection transformation may be in refrence to the co-ordinate system (x and y axis)

Reflection of a Point in the X-Axis

- Retain the abscissa i.e x-coordinate
- change the sign of ordinate i.e y-coordinate
- Eg (2,3) ⟶ (2,-3)

Reflection of a Point in the Y-Axis

- Retain the ordinate i.e y-coordinate
- Change the sign of abscissa i.e x-coordinate
- Eg - (-3,-2) ⟶ (+3,-2)

Reflection of a point in the origin.

- Change in the sign of both abscissa and ordinate
- Eg (-1,2) ⟶ (1,-2)

Coordinate Geometry :-

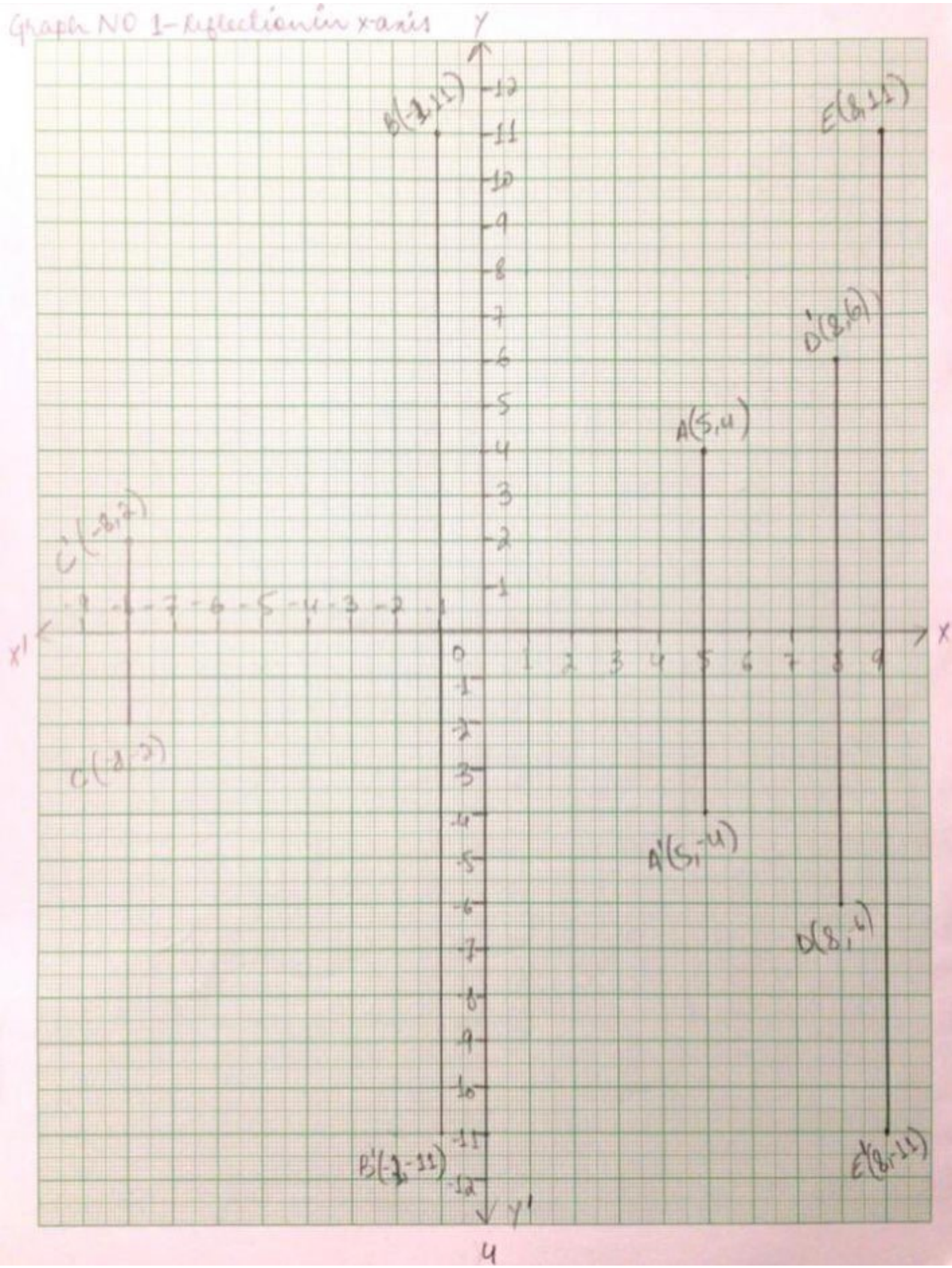
Co-ordinate geometry is that branch of Mathematics which deals the study of geometry by means of algebra. In coordinate geometry, we represent a point in a plane by an ordered pair of real numbers, called co-ordinates of the points, and a straight line or curved line by an algebraic expression with real coefficient. Thus, we use algebra advantageously to the study of straight lines and geometric curves.

When an object is placed before a plane mirror, the image is atthe same distance behind the mirror, as the object is in front of it. The line YY' is the perpendicular bisector of the line XX' and is called the mirror line or mediator.

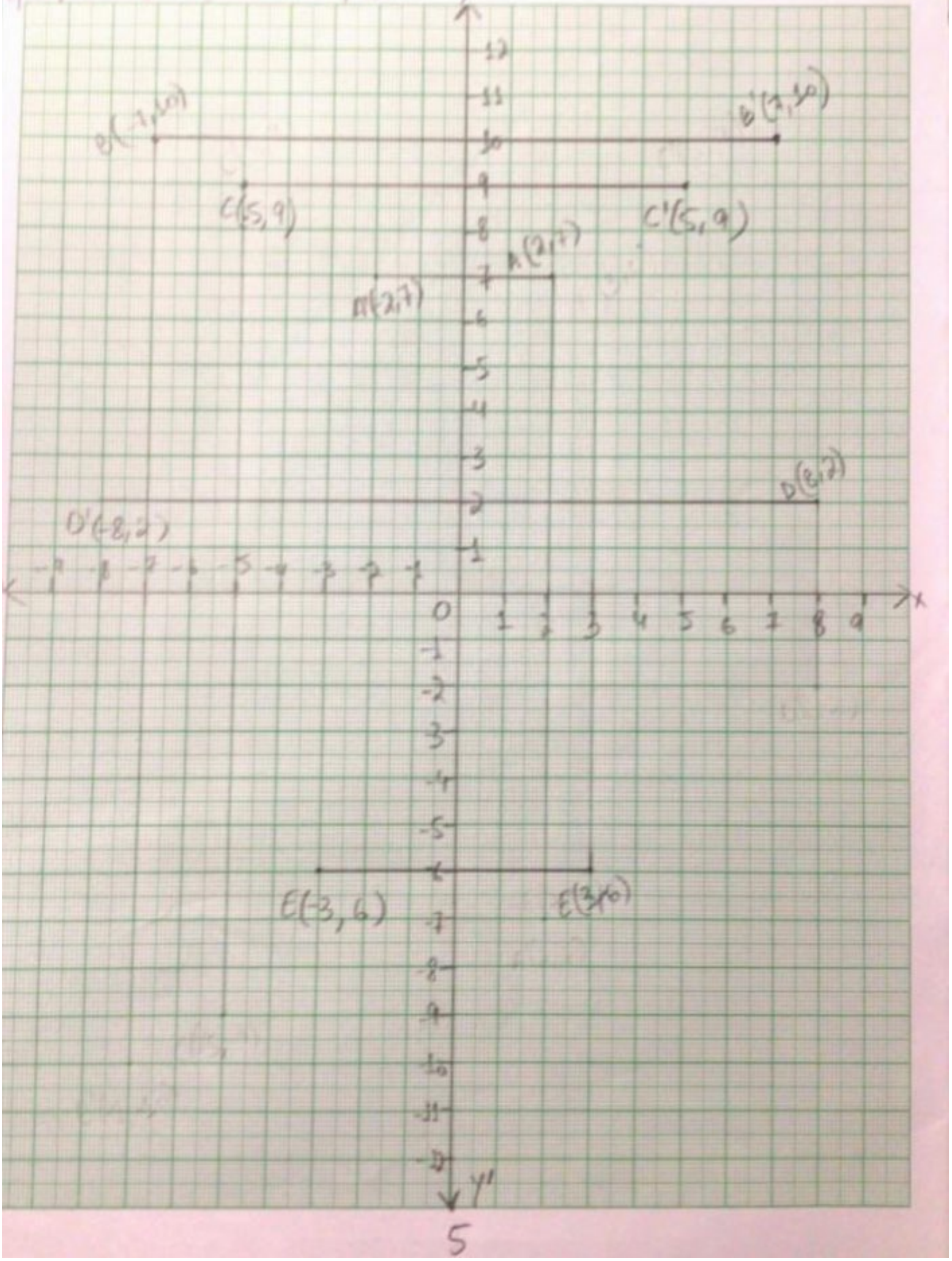
Real life Examples of Reflection

The Symmetry of a face, a butterfly, an airoplane, etc. Mass production of shoes, spectable frames, flipping images on computer, mirror image of sugar molecules like glucose and fructose.

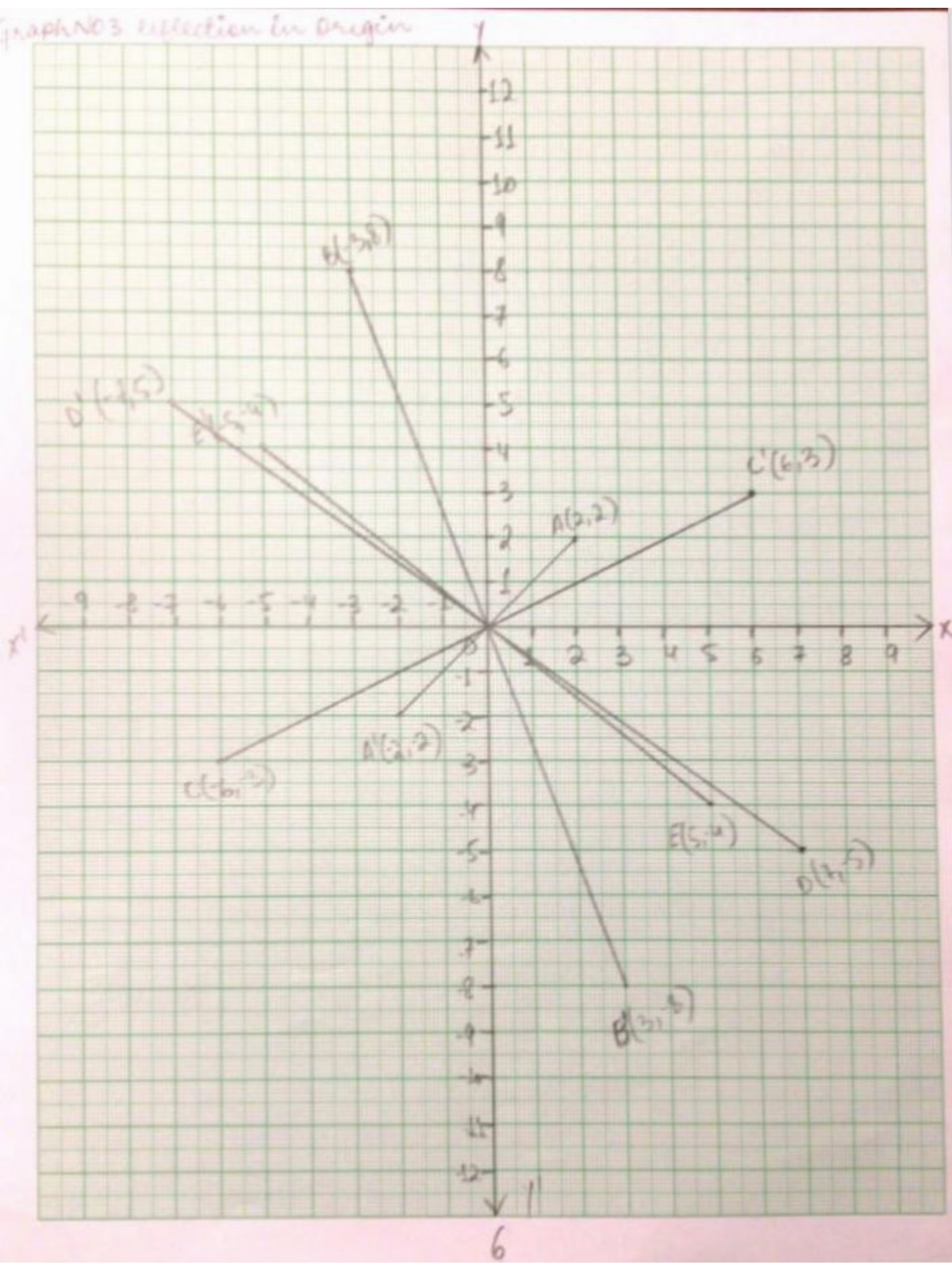
Graph NO 1- Reflection in x-axis



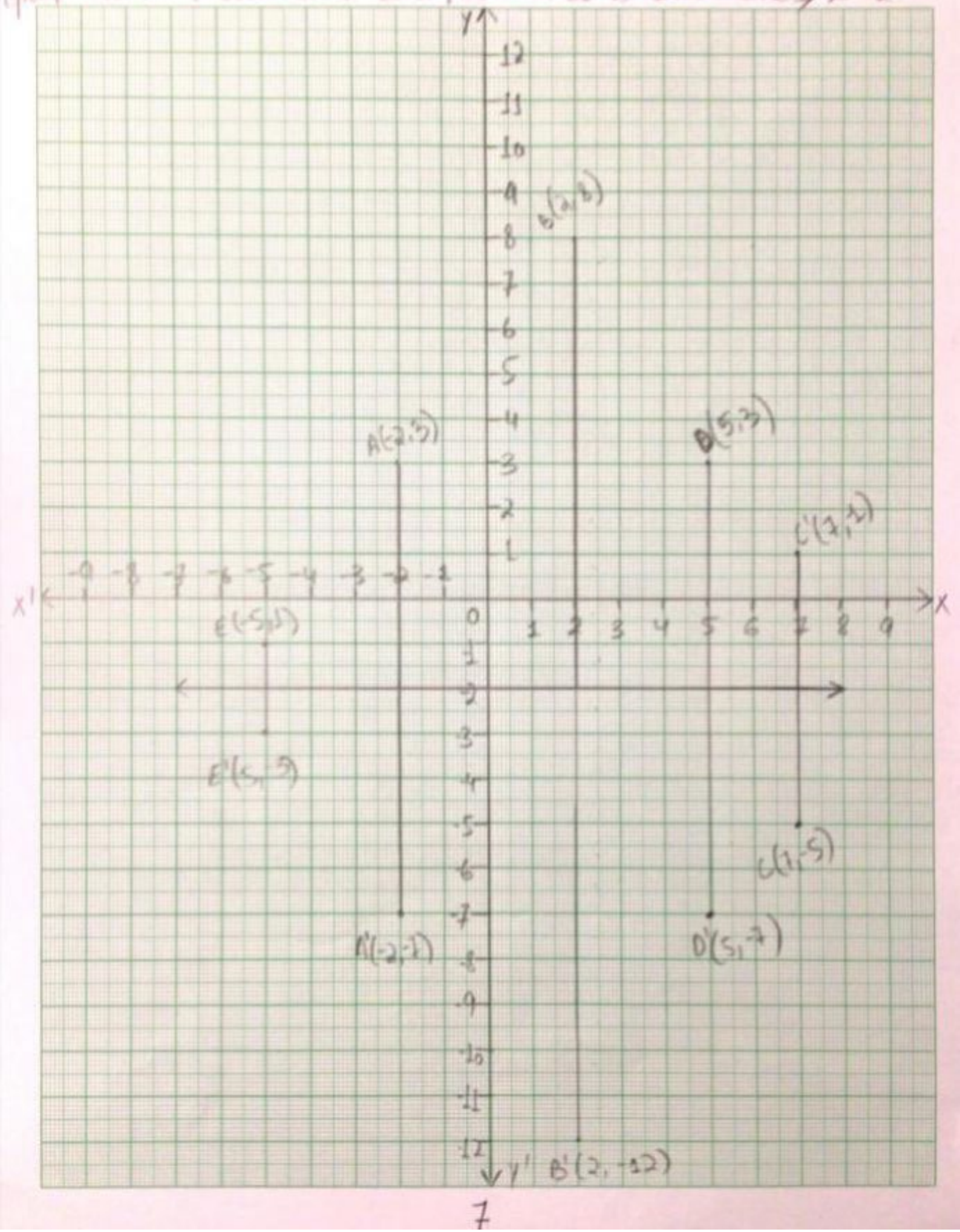
Graph No. 2 Reflection in y axis



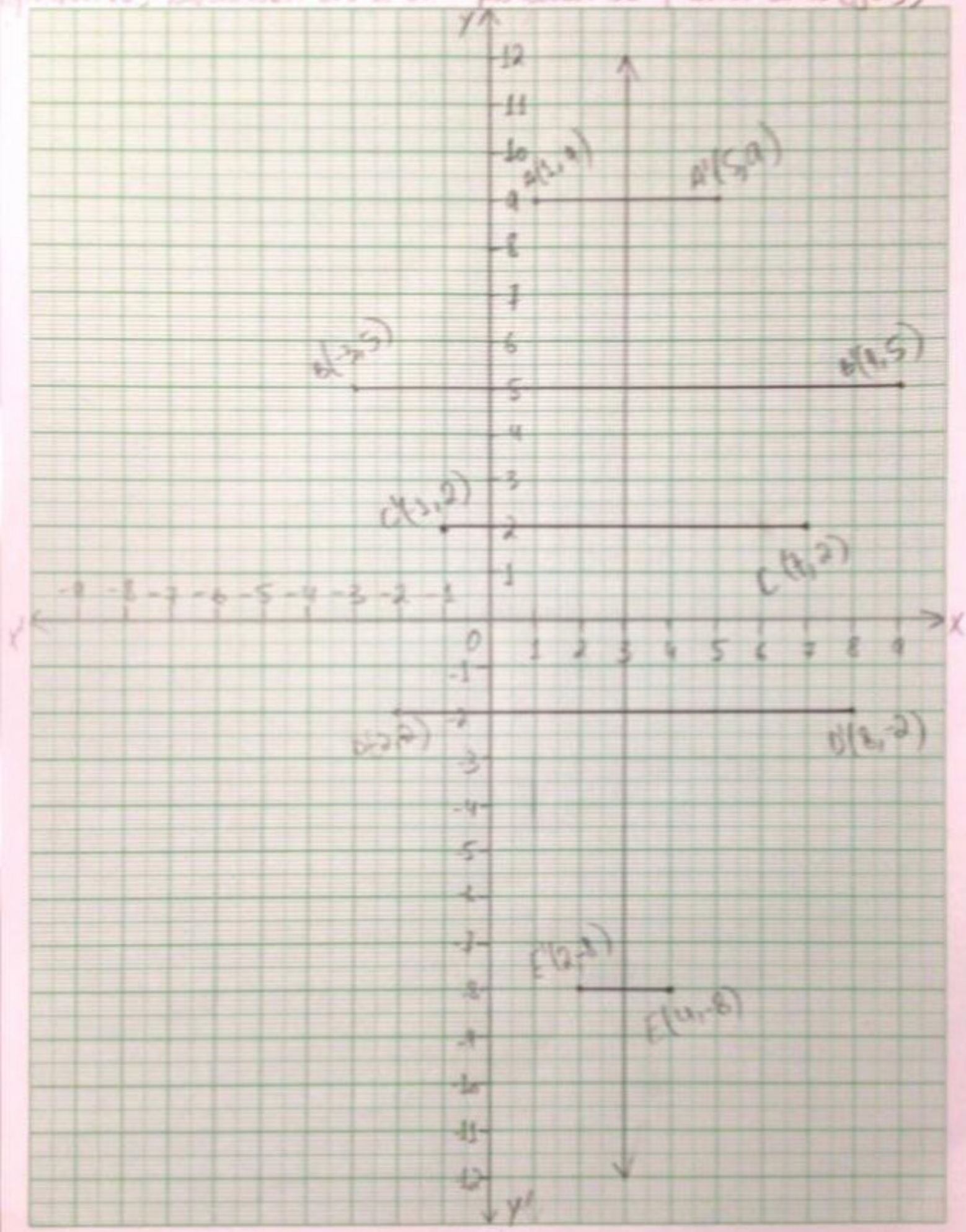
Graph NO 3 Reflection in Origin



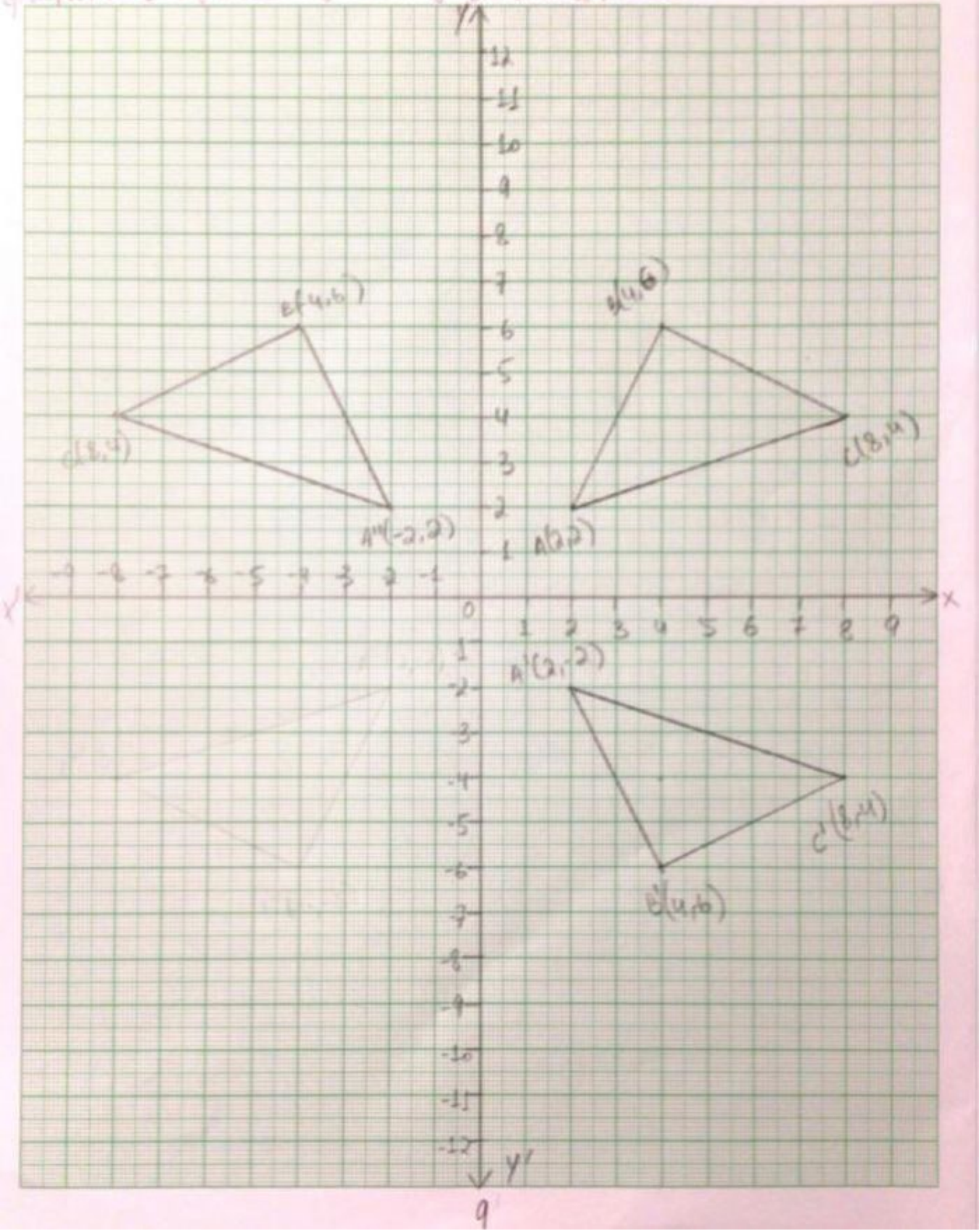
(graph No. 4- Reflection in a line parallel to y-axis. line → x = -2



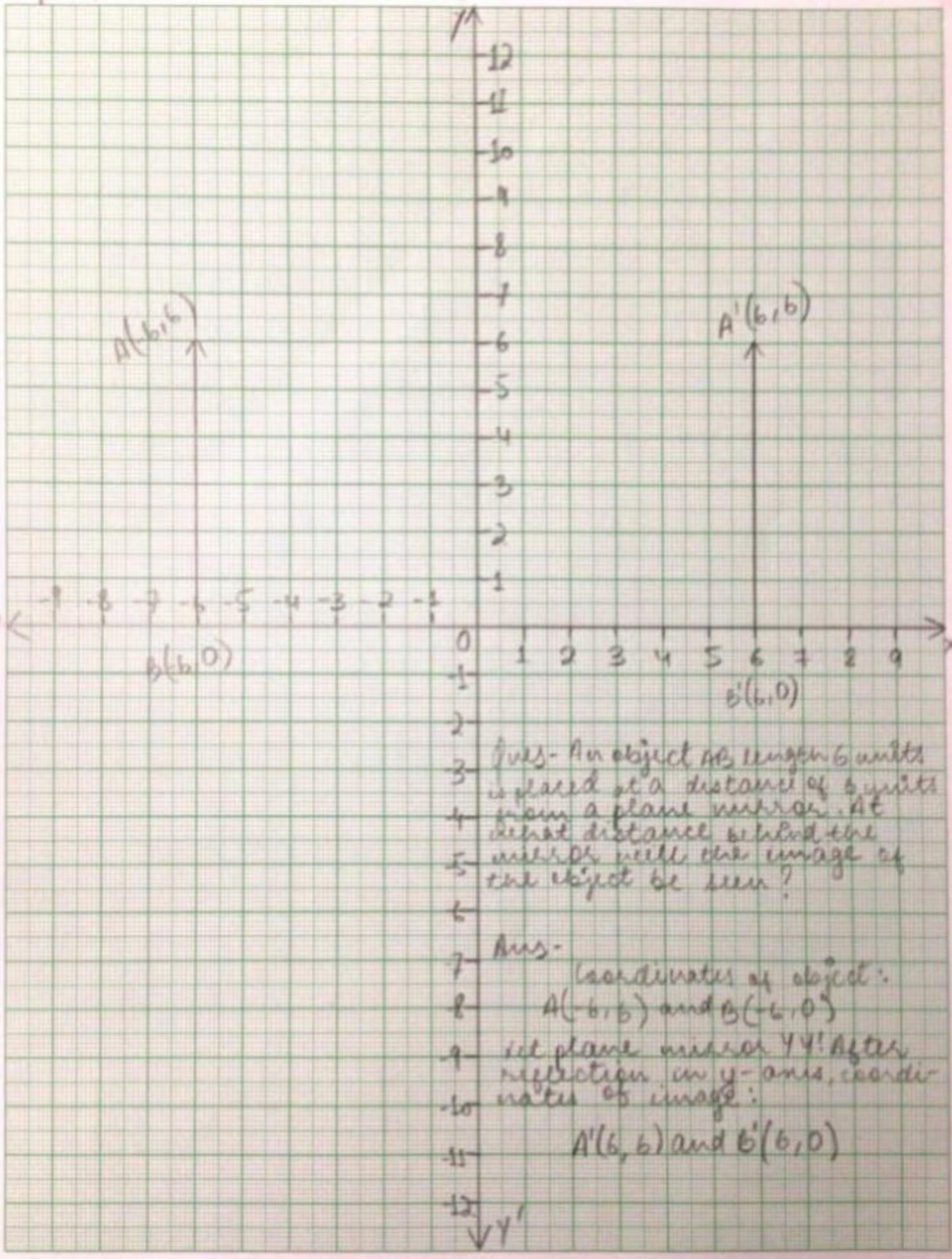
Graph NO. 5. Reflection on a line parallel to Y-axis line (y=3)



Graph NO. 6 - Reflection of a triangle in x and y axis.



Graph 7 -



Ques- An object AB length 6 units is placed at a distance of 6 units from a plane mirror. At what distance behind the mirror will the image of the object be seen?

Ans-

Coordinates of object:
A(-6,6) and B(-6,0)

If plane mirror YY' After reflection on y-axis, coordinates of image:
A'(6,6) and B'(6,0)

Bibliography

1. Understanding Mathematics ICSE Class X by M.L. Aggarwal.
2. www.byjus.com
3. www.mathbitsnotebook.com
4. www.mathisfun.com

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shelly mahajan