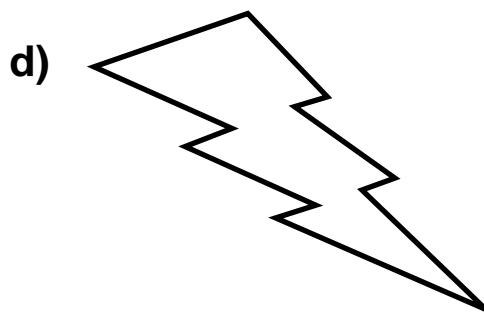
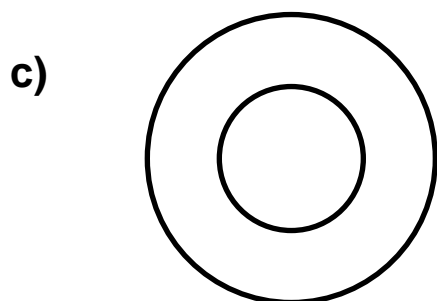
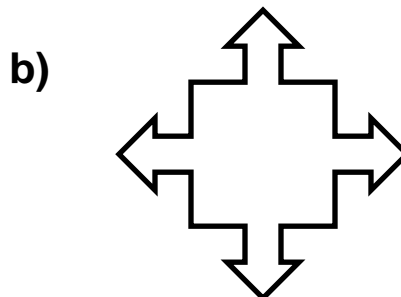
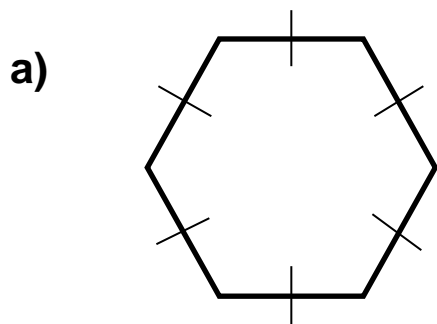


TOPIC 20-2: SYMMETRY & REFLECTIONS

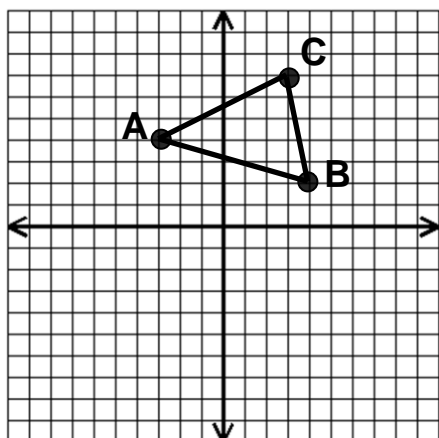
Line of Symmetry: A line that divides a plane figure into two congruent reflected halves.

EXAMPLE 1: Draw the line(s) of symmetry, if any, for the following figures and list how many you were able to draw.



Reflection: A transformation across a line of symmetry such that the line is the perpendicular bisector of each segment joining each point and its image.

EXAMPLE 2: Reflect $\triangle ABC$ across the x-axis and name the coordinates.



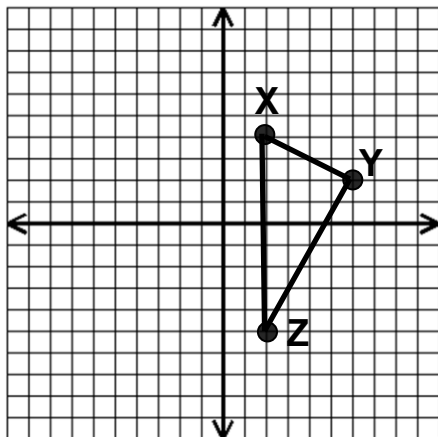
$$A(\underline{\quad}, \underline{\quad}) \rightarrow A'(\underline{\quad}, \underline{\quad})$$

$$B(\underline{\quad}, \underline{\quad}) \rightarrow B'(\underline{\quad}, \underline{\quad})$$

$$C(\underline{\quad}, \underline{\quad}) \rightarrow C'(\underline{\quad}, \underline{\quad})$$

What are the coordinates of point (x, y) after a reflection in the x-axis? _____

EXAMPLE 3: Reflect $\triangle XYZ$ across the y -axis and name its new coordinates.



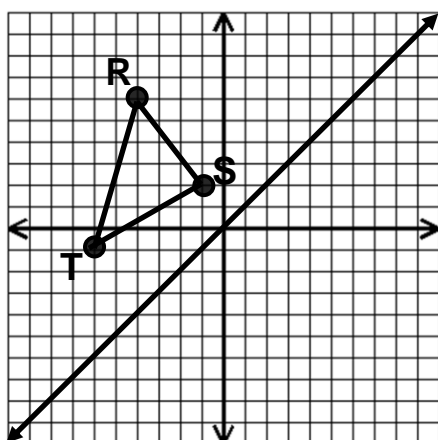
$$X(\underline{\quad}, \underline{\quad}) \rightarrow X'(\underline{\quad}, \underline{\quad})$$

$$Y(\underline{\quad}, \underline{\quad}) \rightarrow Y'(\underline{\quad}, \underline{\quad})$$

$$Z(\underline{\quad}, \underline{\quad}) \rightarrow Z'(\underline{\quad}, \underline{\quad})$$

What are the coordinates of point (x, y) after a reflection in the y -axis? _____

EXAMPLE 4: Reflect $\triangle RST$ across the line $y = x$ and name the coordinates.



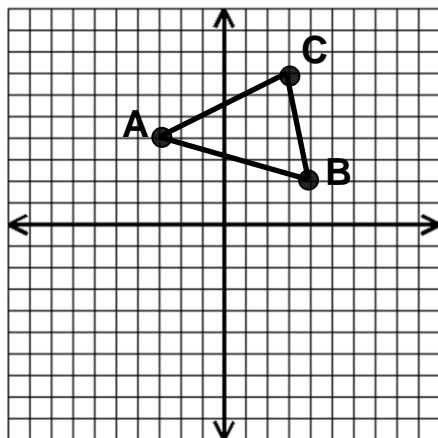
$$R(\underline{\quad}, \underline{\quad}) \rightarrow R'(\underline{\quad}, \underline{\quad})$$

$$S(\underline{\quad}, \underline{\quad}) \rightarrow S'(\underline{\quad}, \underline{\quad})$$

$$T(\underline{\quad}, \underline{\quad}) \rightarrow T'(\underline{\quad}, \underline{\quad})$$

What are the coordinates of point (x, y) after a reflection in the line $y = x$? _____

EXAMPLE 5: Reflect $\triangle ABC$ across the origin and name the coordinates.



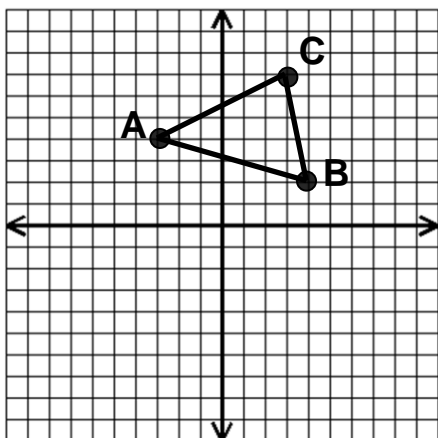
$$A(\underline{\quad}, \underline{\quad}) \rightarrow A'(\underline{\quad}, \underline{\quad})$$

$$B(\underline{\quad}, \underline{\quad}) \rightarrow B'(\underline{\quad}, \underline{\quad})$$

$$C(\underline{\quad}, \underline{\quad}) \rightarrow C'(\underline{\quad}, \underline{\quad})$$

What are the coordinates of point (x, y) after a reflection in the origin? _____

EXAMPLE 6: Reflect $\triangle ABC$ across the line $x = -1$ and name the coordinates.

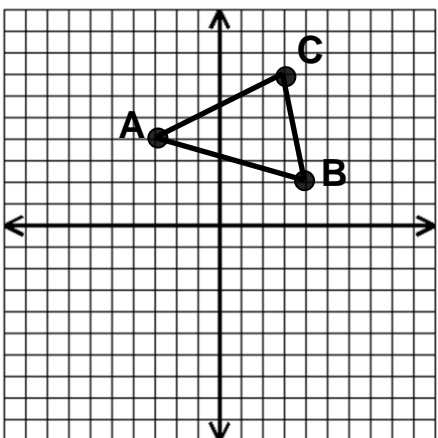


$$A(\underline{\quad}, \underline{\quad}) \rightarrow A'(\underline{\quad}, \underline{\quad})$$

$$B(\underline{\quad}, \underline{\quad}) \rightarrow B'(\underline{\quad}, \underline{\quad})$$

$$C(\underline{\quad}, \underline{\quad}) \rightarrow C'(\underline{\quad}, \underline{\quad})$$

EXAMPLE 7: Reflect $\triangle ABC$ across the line $y = -1$ and name the coordinates.



$$A(\underline{\quad}, \underline{\quad}) \rightarrow A'(\underline{\quad}, \underline{\quad})$$

$$B(\underline{\quad}, \underline{\quad}) \rightarrow B'(\underline{\quad}, \underline{\quad})$$

$$C(\underline{\quad}, \underline{\quad}) \rightarrow C'(\underline{\quad}, \underline{\quad})$$