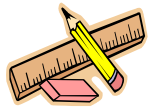


Lab KHM 2.1

Transformation Symmetry

Name _____

Date _____ Period _____



Materials: MIRA or other reflecting tool, compass, angle ruler (or straightedge and protractor), $\frac{1}{4}$ page acetate sheets or tracing paper, wet erase markers, moist paper towels (for erasing)



Key Learning: Explore geometric **transformations** in the coordinate plane. Discover and identify the properties of **reflections**, **rotations** and **translations**. Describe how each transformation matches each point in a figure to its image.



Guided Directions



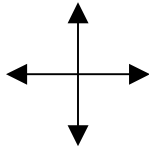
this is a
GROUP
ACTIVITY

Follow the instructions on the attached labsheets to transform (move) each image about in the coordinate plane. With help from your teacher, experiment with your new tools (compass, angle ruler) to see how they can aid you in your exploration.

Activities 1-3 contain specific activities.

On the custom activity sheet, create your own design and specify your own transformations. You may mix transformations, i.e. you can reflect then rotate or slide then rotate or whatever. Write the instructions for the transformations below the graphs and label the image figures using prime notation. Challenge your lab partners. Create as many custom sheets as you can (at least 2 or 3). Have Fun!

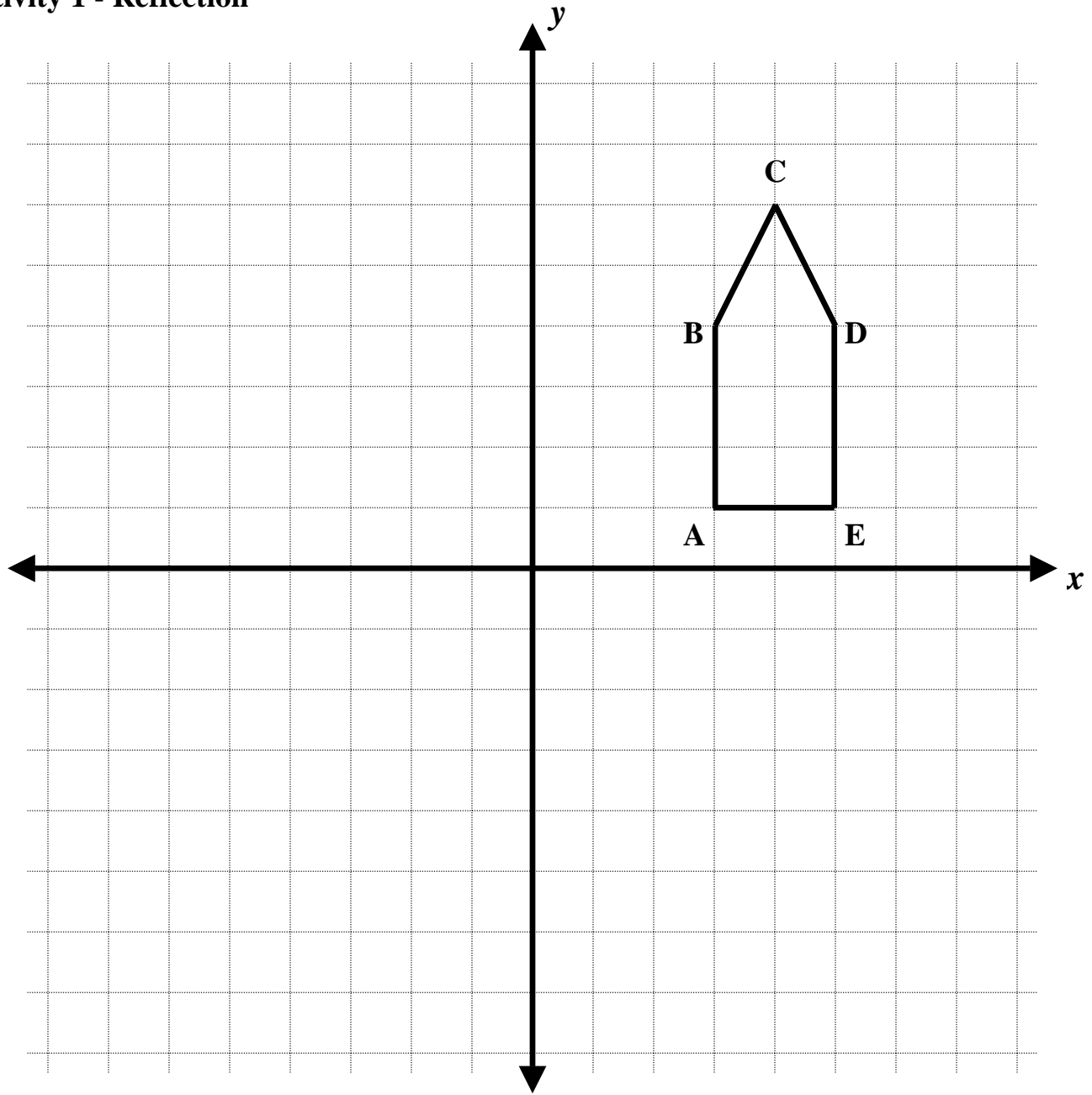
Lab KHM 2.1
Transformation Symmetry



Name _____

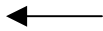
Date _____ Period _____

Activity 1 - Reflection



- 1) Draw a new figure as a **reflection** of the original over the y -axis. Label the image figure using prime notation.
- 2) Reflect the image over the x -axis. Draw the new image figure and label using prime notation (i.e. double-prime).

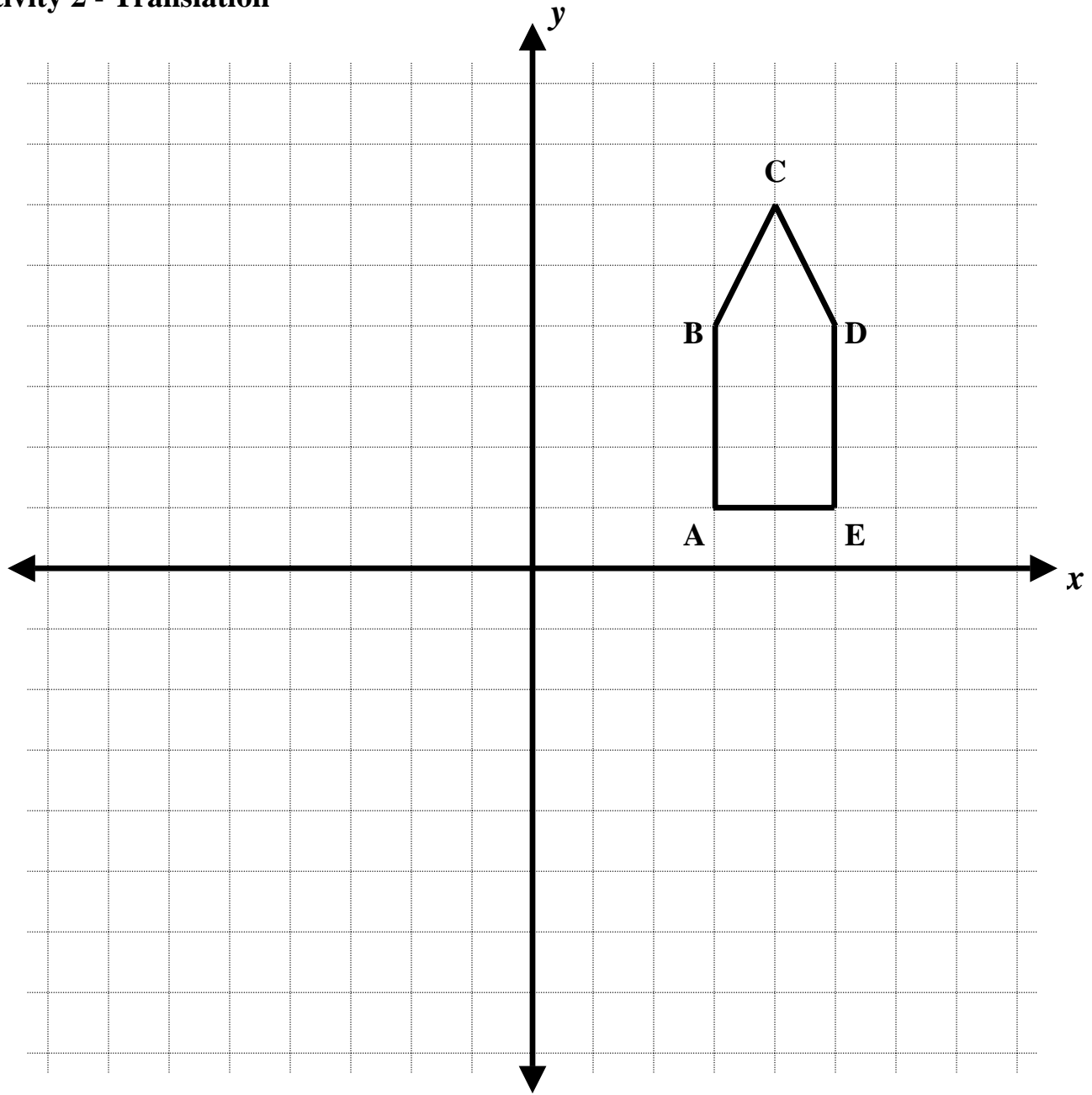
Lab KHM 2.1
Transformation Symmetry



Name _____

Date _____ Period _____

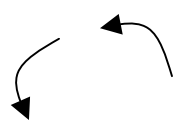
Activity 2 - Translation



- 3) Draw a new figure as a **translation** (slide) 6 units to the left of the original location. Label the image figure using prime notation.

- 4) Translate the image 7 units down. Draw the new image figure and label using prime notation (i.e. double-prime).

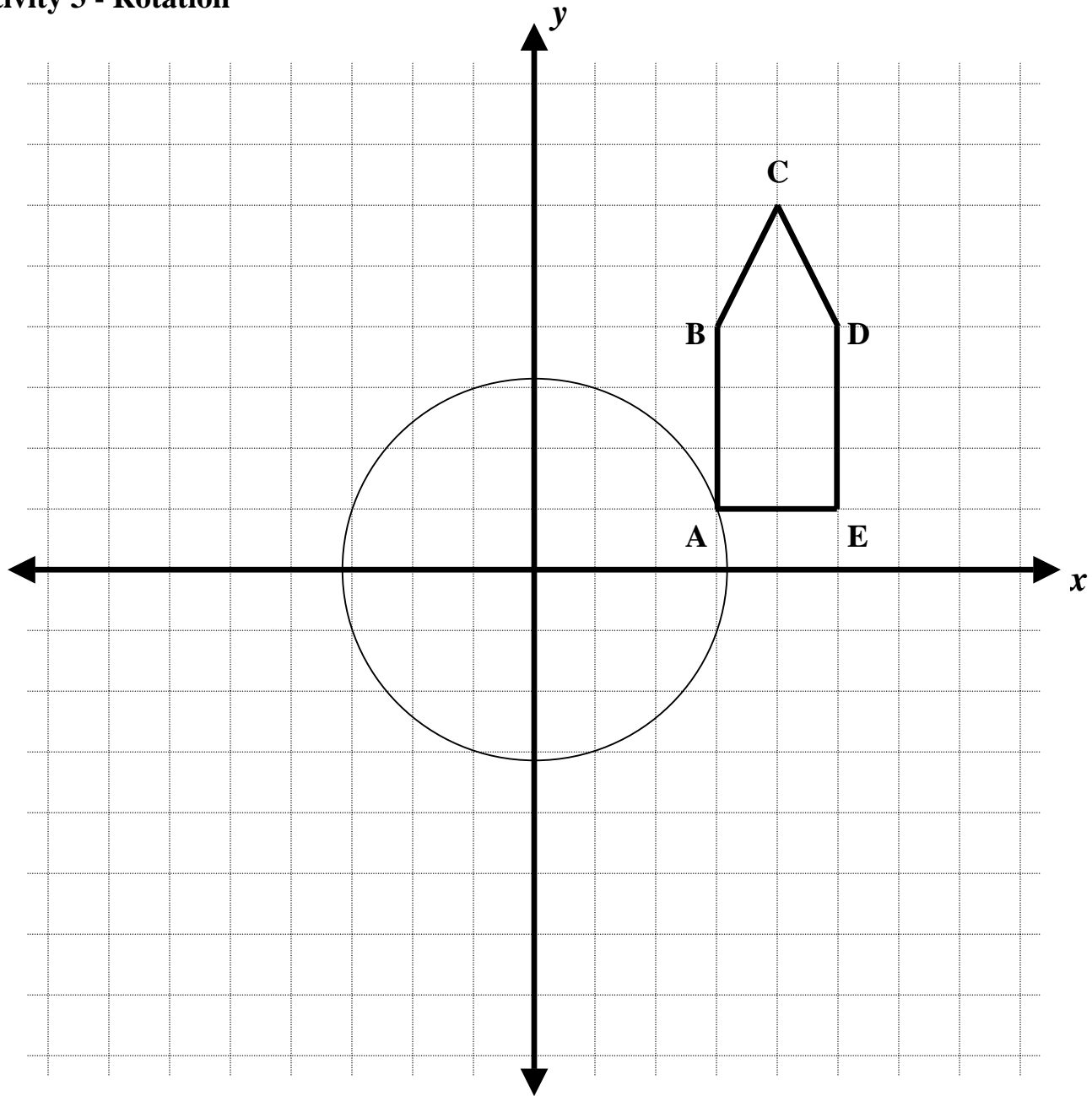
Lab KHM 2.1
Transformation Symmetry



Name _____

Date _____ Period _____

Activity 3 - Rotation



- 5) Draw a new figure as a 90^0 rotation of the original about the origin. Label the image figure using prime notation.

Draw the circular paths of each vertex using your compass (the path for vertex A is drawn for you).

Measure the accuracy of your rotation using your angle ruler.

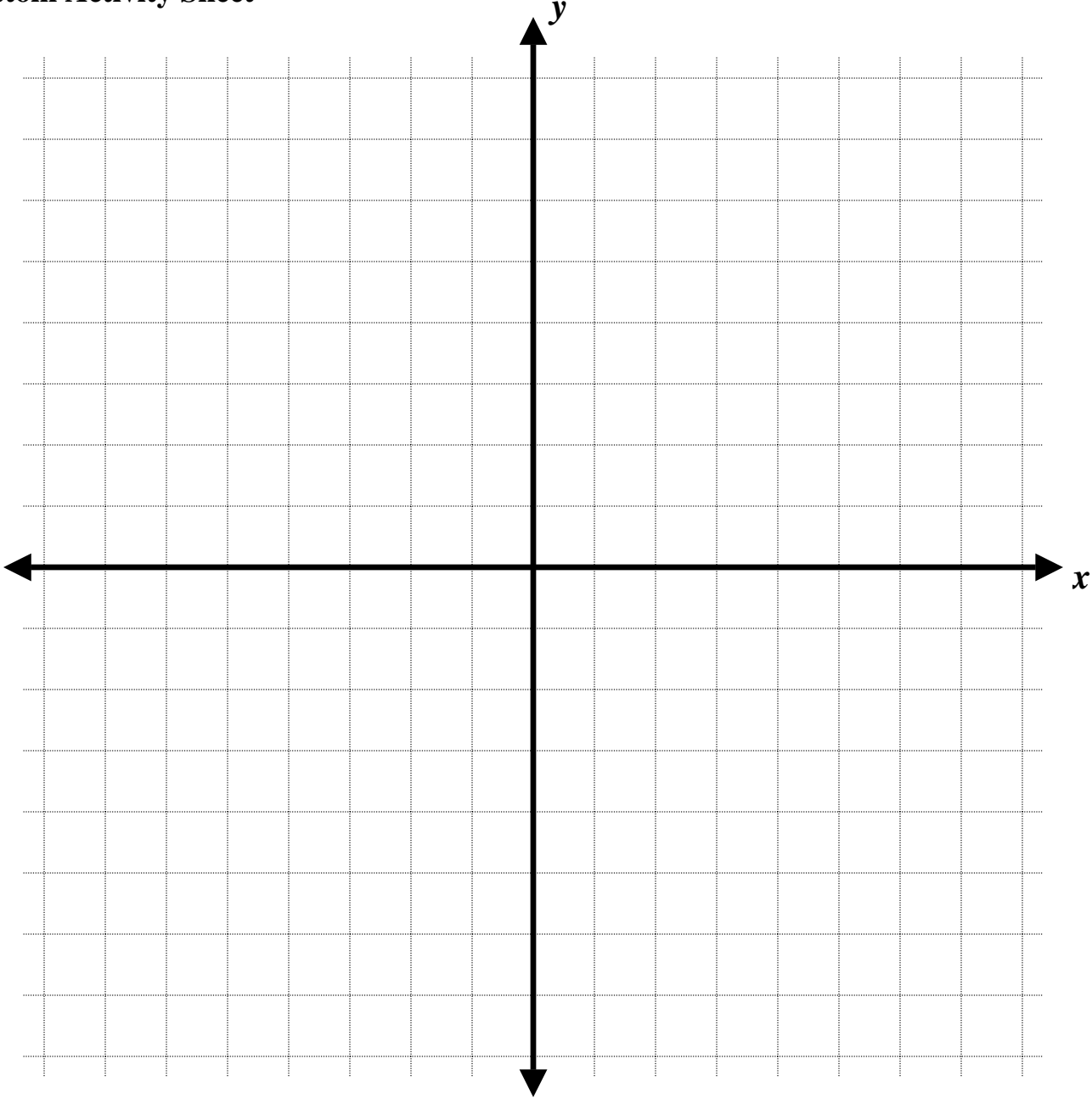
- 6) Rotate the image 90^0 about the origin. Draw the new image figure and label using prime notation (i.e. double-prime).

Lab KHM 2.1
Transformation Symmetry

Name _____

Date _____ Period _____

Custom Activity Sheet



Lab KHM 2.1
Transformation Symmetry

Name _____

Date _____ Period _____

Custom Activity Sheet

