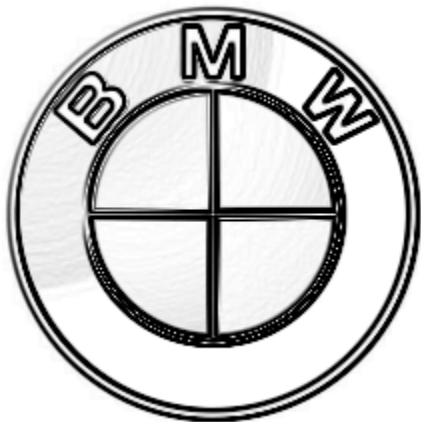


## Geometry Unit 1 Performance Task

**CONTEXT:** A new car company is emerging and is looking to brand themselves with a new logo. They are considering your design firm as one who could create their logo. The company has a few ideas they would like to incorporate in the design. They are thinking about including a few particular shapes in the finished product. Before they hire you they would like to test your competency through a series of tasks.

### TASK #1

Reassure the car company that they need geometry in their logo because most of their competitors use geometric fundamentals as a basis for their logos. Prove this to them by a study on competitor logos. Look at the following logos. Notice that each may contain lines, line segments, rays, and angles. Label and name all the visible fundamental pieces of geometry. Be sure to place letters on the logo, and then use those letters to name all the lines, line segments, rays, and angles that you see.



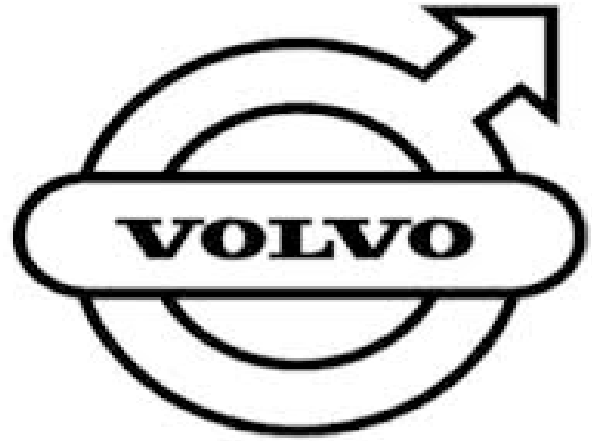
Mercedes-Benz



Volkswagen

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LEXUS

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Oldsmobile

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Write a conclusion of your findings that you will present to the board of directors at the car company.

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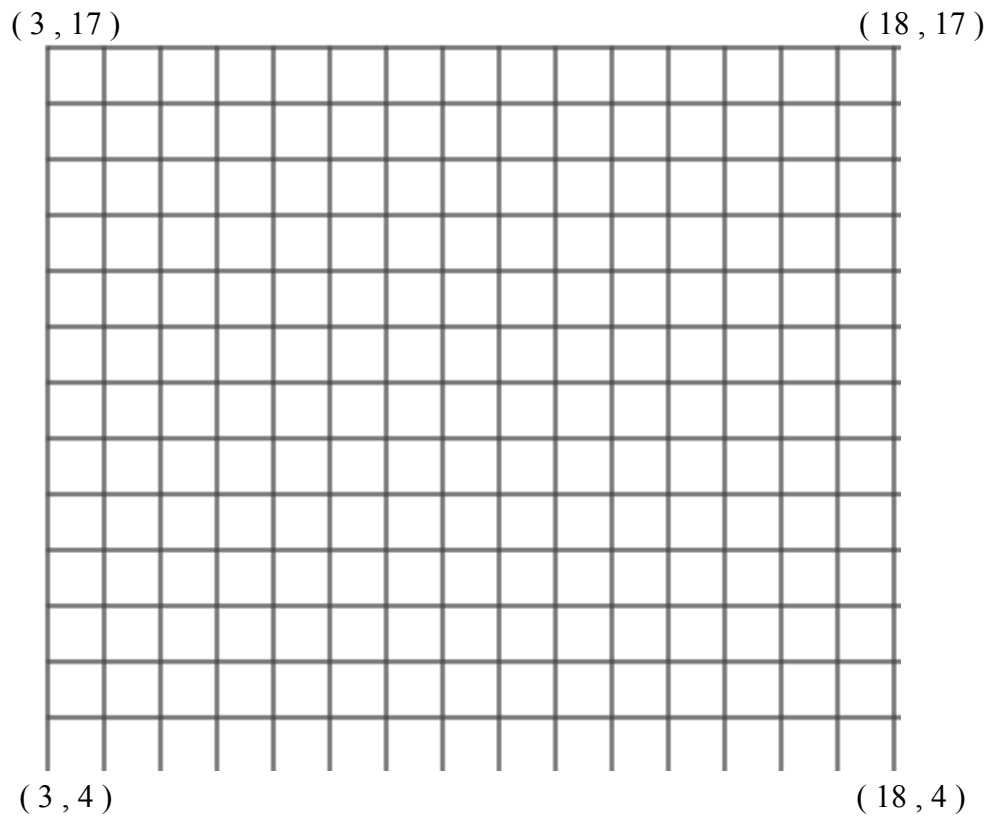
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## TASK #2

The board, now reaffirmed by your findings, is certain that they would like an *equilateral* triangle as a part of their logo. They envision a glimmering shape that includes a "sparkle" at the midpoints of each side of the triangle. Use the grid below, which includes the corner coordinates, and create an equilateral triangle that is as large as the grid will permit. After you have created the triangle include the sparkles on the midpoints. Label the vertices and midpoints with letters to be able to refer to them.



Find the slope of each of the three sides.

Name the coordinates of the midpoints

Find the distance of each of the three sides.

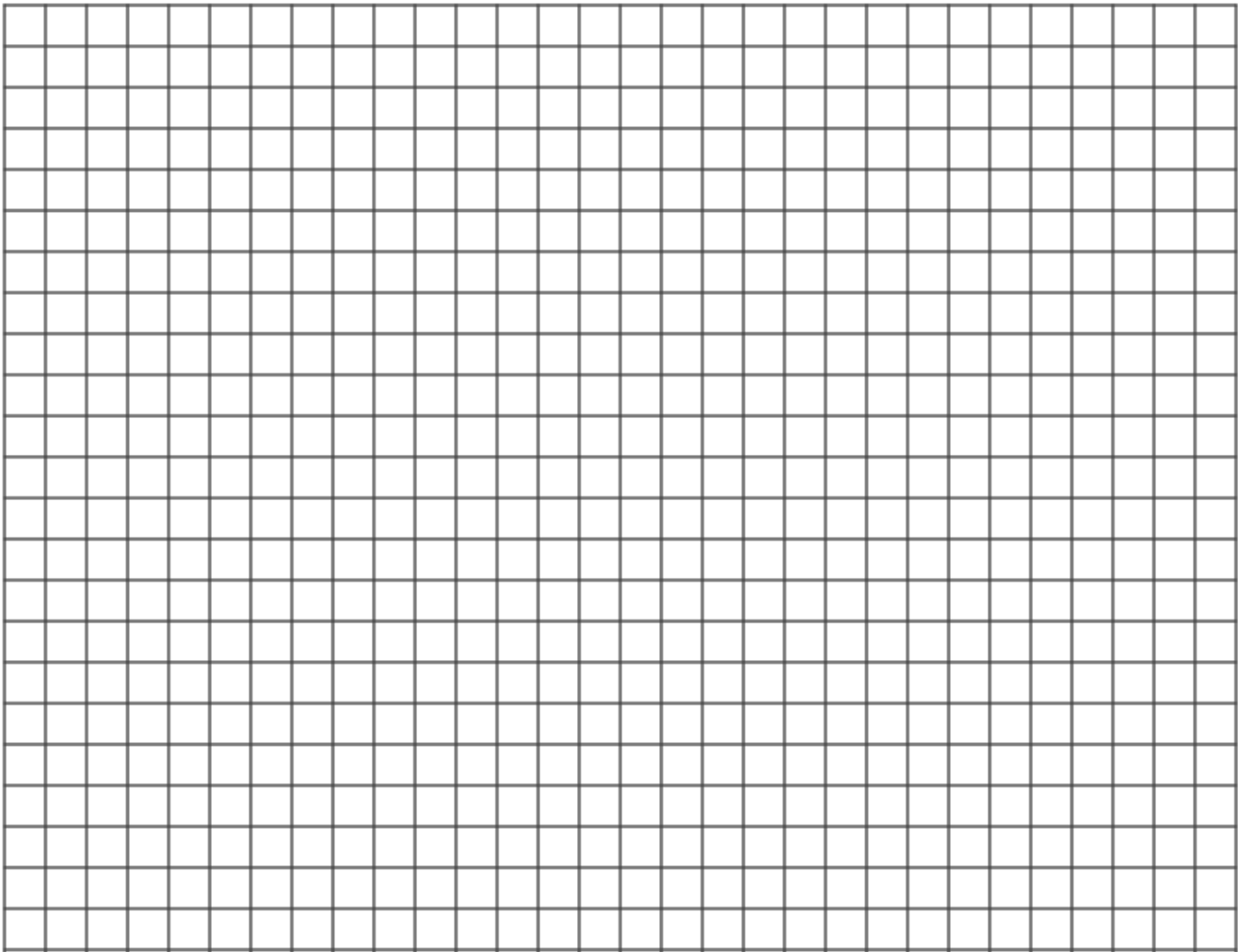
### **Task #3**

Now that you have mastered the equilateral triangle, a major piece of the desired logo, the company is ready to employ you to create the entire logo.

#### **The essentials include**

- Two congruent equilateral triangles that each have a base on the bottom of the logo's grid.
- A square will be between the triangles and must have corners that are the midpoints of the sides of the equilateral triangles.
- Logo must fit within the given the grid

On your diagram label with coordinates of the midpoints and the vertices of the two triangles and the square.



Justify that your triangles are equilateral and congruent and that you have drawn a square by finding the side lengths of each side using distance formula.

SHOW WORK HERE.

## **TASK #4**

Now that you have a blueprint of what the logo will look like, the company would have you create the logo without the grid. They have also decided that they no longer want the square in the center but they would prefer a hexagon circumscribed by a circle.

Construct the logo with a compass and straightedge. Feel free to then build upon the basic shapes of the logo. Be creative and make the logo something that will represent their brand. Then, put the name of the company either within the logo, or beneath it as other competitors have done.

Finally, present your constructed logo to a panel of the car company's board of directors. Explain the process of creating the logo, including the formal constructions, and whatever creative pieces you added to the logo. Justify your choices and make an alignment to how you envision the companies name and image. Presentation should be 3-5 minutes in length.