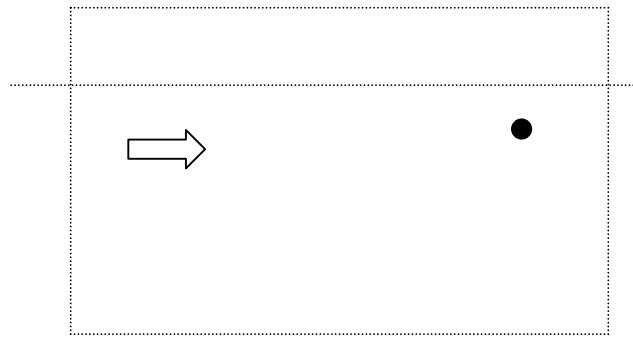
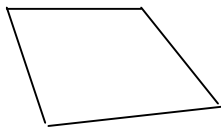


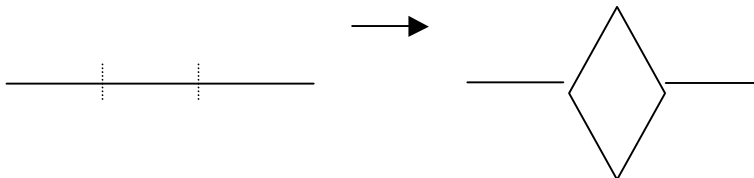
1. a) Explain the difference between Euclidean, Riemannian, and Lobachevskian geometry in reference to its parallel postulate and the sum of the angles of a triangle.
 b) Draw an equilateral triangle on the model for each of the above geometries.
2. Explain four techniques used by the artist to display 3-D space on a canvas.
3. Using the picture frame, eye level line, and vanishing point, draw two more arrows in a one-point perspective.
4. If one side of a Golden Rectangle is 24 inches, find two other possible lengths for the other side. Why would you want to have the rectangle have such dimensions?



5. Explain how you can draw a regular decagon (10 sides). Make a sketch of regular decagon and a 10 point star.
6. What is a tessellation? Create a tessellation using at least 8 of the quadrilaterals given below.



7. A fractal is created by taking a line segment, dividing it into three equal pieces, removing the middle piece and replacing it two with equilateral triangles with sides equal to the removed piece as shown below. Draw the next iteration of the fractal.



Extra Credit:

Find the dimension of the above fractal and explain what it means. Note: $d = \frac{\log n}{\log\left(\frac{1}{r}\right)}$