

Some Sketchpad Investigations

1. Construct circles of various sizes and measure the radius, the circumference, and their ratios. Measure the ratio of the area to the square of the radius.
2. Construct n -gons circumscribed in circles and measure the radius, the perimeter, and their ratios. Measure the ratio of the area to the square of the radius.
3. Given two points, find the set of all points equidistant from both of them.
4. Given three points, find the set of all points equidistant from both of them.
5. Given three points, find the shortest way to “connect them up.” You may need to insert more points.
6. Given four points, find the shortest way to “connect them up.” Try starting first with the four corners of a square.
7. A camper is walking toward her tent. She wants to make a stop at a nearby river first. What is her shortest route?
8. Construct a “virtual” kaleidoscope by multiply reflecting a pattern in two lines.
9. Make a triangle. Can you tile the plane with copies of it? For which triangles can you?
10. Make a quadrilateral. Can you tile the plane with copies of it? For which quadrilaterals can you?