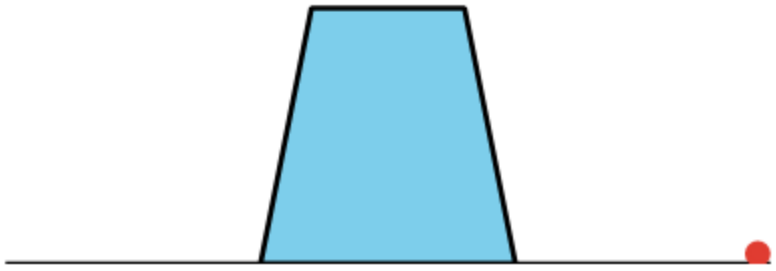
Project 7: Design a Fountain Activity Sheet

Part 1: Introduction to Fountain Design

The trapezoid represents the statue and the red dot is the location of the water jet.



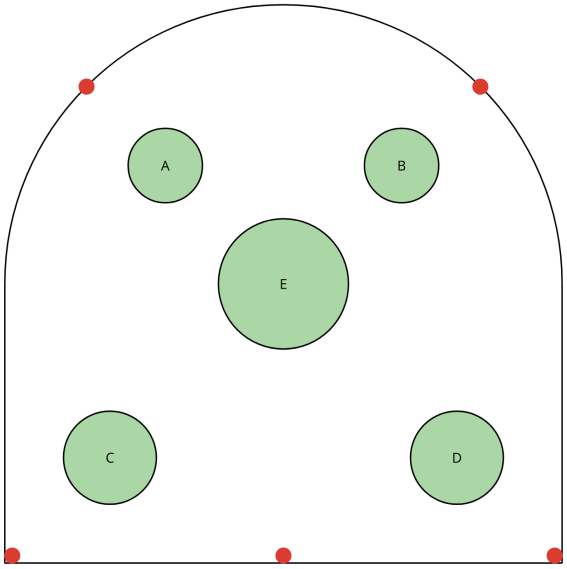
1. What would you need to know in order to write an equation for a path for the water that would make it go over the statue?

2. What is a reasonable height of the statue and a reasonable distance from the jet to the statue?

3. What strategy would you use to find the equation for the path of the water?

Part 2: Designing a Fountain

A nearby park has a decorative pool, and the board of commissioners of the park is considering installing water jets in the pool to make it into a fountain. They have asked you to design the water jets. Here is a diagram of the pool from above:



- A and B are statues which are 4 feet tall.
- C and D are wider statues which are 5.5 feet tall.
- E is a statue with a vase on top, which is 8 feet tall.
- The pool is 15 feet wide.

The diagram is drawn to scale. The dots along the edge show where jets can be placed. You don't have to put jets in all five places. The jets will be at water level.

You will need to figure out how many jets there should be, where they should go, and what path the water should make. Your design needs to meet these criteria:

- The jets can only go in the places indicated by the dots.
- There must be at least two jets.
- The water can't hit any of the statues.
- Some water must go into the vase.
- The water can't go higher than 10 feet.

When you have your final design, you should create a presentation to explain it to the commissioners. The presentation should show the paths of the water and include your mathematical descriptions of the paths.