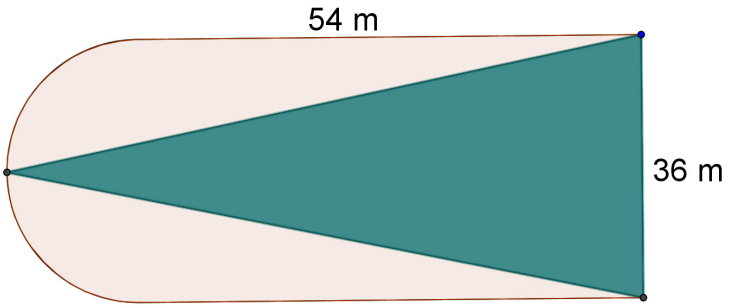
Advanced Math Problem Solving #3
Quarter 2

1. A semicircle adjoins a **rectangle having the dimensions 54 m by 36m**, and an isosceles triangle is inscribed as shown. Find the area of the region lying outside of the triangle.



2. Simplify the trigonometric expression $\frac{\tan^2\theta+1}{\sec\theta}$ to one of the six common trigonometric functions.

3. A cube measuring 100 units on each side is painted only on the outside and cut into unit cubes (sides measure 1x1x1). How many unit cubes have paint on exactly two faces?

2. The diagram displays 6 cans that have been stacked so that they all are mutually tangent to one another. If point V is 2 units above the ground, determine the radius of each can.