Group Homework 4

1. Prove (without a table) the formula $A = \frac{1}{2}r^2\theta$ for the area of a sector of a circle with radius r and central anlge θ. [Hint: Assume $0 < \theta < \frac{\pi}{2}$ and place the center of the circle at the origin so it has the equation $x^2 + y^2 = r^2$. Then A is the sum of the area of the triangle POQ and the area of the region PQR iin the figure.]