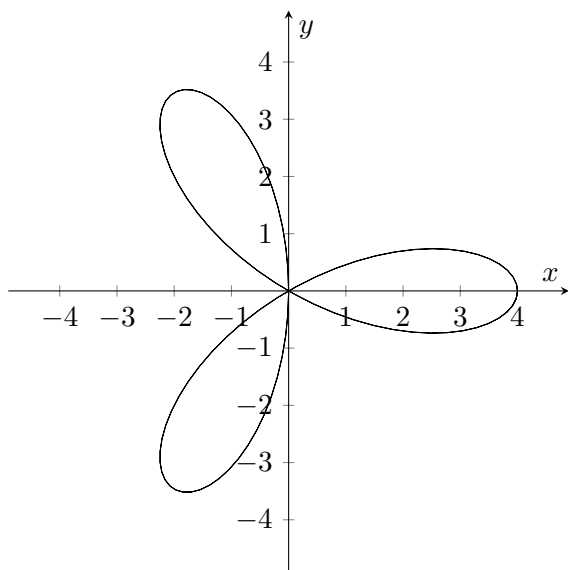1. Find the area of the region enclosed by one loop of the curve defined by the polar equation $r = 4\cos 3\theta$.

2. Sketch the graph of $9x^2 + 16y^2 = 144$ and locate the foci.