(1) Suppose you have two circles, one with radius $r_1$ centered at the origin, and one with radius $r_2$ centered at $(r_1 + r_2, 0)$. Thus, the circles have the point $P = (r_1, 0)$ in common. Suppose the circle with radius $r_2$ begins rolling counterclockwise along the outside of the other circle. As the circle rotates, the point that was originally at $P$ will also rotate, tracing out a path in the plane. Find parametric equations for this path.