Additional Questions for Homework on Section 10.4

A. For each of the following, determine the slope of the tangent line to the polar curves at the point determined by the given value of θ. Then find the (Cartesian) equation of the tangent line.

(a) $r = \theta$, $\theta = \pi/4$

(b) $r = 2\sin\theta$, $\theta = \pi/3$

(c) $r = 1 + \cos\theta$, $\theta = 2\pi/3$

(d) $r = \sin(3\theta)$, $\theta = 2\pi/3$