Section 9.7

(A)

Transform

\[ x' = \frac{1}{8}x + y + x(x^2 + y^2)^2 - x(x^2 + y^2) \]

\[ y' = \frac{1}{8}y - x + y(x^2 + y^2)^2 - y(x^2 + y^2) \]

to a differential equation in \( r \) and \( \theta \). Then find the periodic solutions and classify their stabilities. And sketch solutions.