Assignment 10

Determine the type of each of the following equations, reduce them to canonical form, and then find their general solution.

(1) $\frac{\partial^2 u}{\partial x^2} + 6\frac{\partial^2 u}{\partial x \partial y} - 16\frac{\partial^2 u}{\partial y^2} = 0.$

(2) $\frac{\partial^2 u}{\partial x^2} + 2\frac{\partial^2 u}{\partial x \partial y} + \frac{\partial^2 u}{\partial y^2} = 0.$