Homework 12, due 5/21, 10pm

1. [5pts] Solve the problem for $w(r, \theta)$ in a unit disk

$$\Delta w = 0, \quad \text{in } 0 < r < 1,$$
$$w(1, \theta) = x^2 + y, \quad \text{on } r = 1.$$

Find the expression of $w(r, \theta)$ and then express it in terms of x, y.