Dr. Z.'s Math 421(1), (Fall 2014, RU) REAL Quiz #7

NAME: (print!) _____

E-MAIL ADDRESS: (print!) _____

1. (5 points) The **Zoe** polynomials $Z_n(x)$ are defined by

$$Z_n(x) = Z_{n-1}(x) + Z_{n-2}(x) + xZ_{n-3}(x)$$

with initial conditions $Z_0(x) = 1, Z_1(x) = x, Z_2(x) = x^2$. Find $Z_3(x)$ and $Z_4(x)$.

2. (5 points) Find product solutions, if possible, to the partial differential equation

$$\frac{\partial^2 u}{\partial x^2} - 2\frac{\partial^2 u}{\partial x \partial y} + \frac{\partial^2 u}{\partial y^2} = 0 \quad .$$