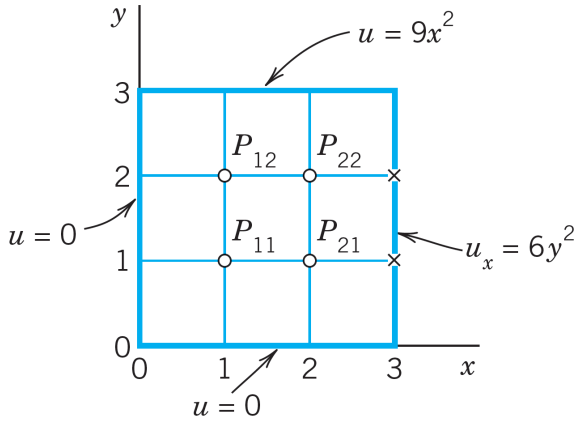


Quiz #5 (EngMath I) [Wednesday, November 29, 2017]

Name: _____ Dept: _____ ID No: _____

1. (15 points) Solve the mixed boundary value problem for the Poisson equation $\nabla^2 u = x^2 + y^2$ with the boundary data and grid as given in the following figure.



2. (5 points) Compute the following integral using the Gauss quadrature with $n = 3$

$$\int_0^4 e^{3x} dx$$

3. (10 points) Interpolate

$$f_0 = f(0) = 0, f_1 = f(1) = -1, f_2 = f(2) = 0, f_3 = f(3) = 1$$

by the cubic spline satisfying $k_0 = 6$ and $k_3 = 0$.