**Bonus Assignment #2**

**COEN 317 Distributed System**  
**Department of Computer Engineering**  
**Santa Clara University**

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Office Hours: Friday 9:30-10:00pm

**Fall Quarter 2017**

**Due date:** 7:00pm September 22, 2017

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**Problem 1**

A 2D CAN system has equal sized zone on its $d$-torus at a particular time $t$, and each zone with size 0.25 on every dimension.

a) Please find the shortest paths from node (0~0.25, 0~0.25), i.e., the left-bottom corner zone, to any other zones by filling the following shortest path matrix:

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b) For each zone with size 0.2 on every dimension, fill the following shortest path matrix:

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**Problem 2**

A $d$-dimensional CAN system has equal sized zone on its $d$-torus at a particular time $t$, and each zone with size $1/d^2$ on every dimension. What is the routing complexity in term of big O notation?