**[Course Number]**

**[Course Name]**

**Participation Exercise: Bus Capacity**

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Please solve the following numerical problem.**

A transit route has 8 total bus stops. The critical bus stop is Stop #3, which is an online stop located at the near-side of a signalized intersection. The following information is known about the bus route:

* Dwell time at critical stop = 40 seconds
* Clearance time at Stop #3 = 10 seconds
* Coefficient of variation for dwell times is 60%
* The signal at Stop #3 has a cycle length of 90 seconds, and the bus approach has 40 seconds of green time per cycle.
* The acceptable failure rate is 7.5%

You may find the following table from TCQSM page 6-65 helpful.



Determine the bus load area capacity. Please show your supporting calculations.

*Acknowledgements: This problem has been adapted from Dr. Alison Conway at CCNY.*