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CSIS446 – Decision Support System

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Queue Assignment

**Problem 1**

Working in a call center, calls come in at a rate of 4 per minute. The average duration of these calls is 6.5 minutes. There are currently 27 representatives that are taking calls.

How long will a customer wait to speak to a representative?

On average a customer will wait just over 2.6 minutes to speak to a representative. (See Problem 1 chart)

What percentage of the time are the representatives busy on the phone?

Representatives are busy just shy of 94% of the time.



**Problem 2**

The desire is that customers wait no longer than 1 minute on average to speak to a representative.

How many representatives are required to achieve this target?

Looking the Problem 2 charts below, we can see that 31 is 1 server short of that minute mark, 33 is 1 more than what is necessary, and 32 servers will hit the minute marker we are searching for.

What percentage of the time will the representatives be busy on the phone?

With 32 servers operating, they will stay busy just over 80% of the time.







**Problem 3**

Instead of adding staff to achieve the desired minute wait, the 27 current representatives could be trained to handle a call in less than 6.5 minutes.

What value would Service Time need to become?

The charts below break up Service Time by 30 seconds a call. Using this we can see that 5.5 minutes is the optimal Service Time to get calls answered within the minute wait time requested.

What percentage of the time will the representatives then be busy on the phone?

Shortening up the call times actually also lowers the percentage of time representatives are also busy. Bringing this number down to 79%



