

## M/M/1/k/k Queues (VI): Example

- Users of a time-sharing system have exponentially distributed think times with an average value of 20 seconds.
- Service time are exponentially distributed with a mean of 1.5 seconds.
- Q: how many terminals can the system support if we want the average stretch factor is no more than 5?
- Solution: Use M/M/1/k/k model



 $\beta$  = arrival rate per user = 1/20 per second  $\mu$  = service rate = 1/1.5 = 2/3 per second Find maximum k satisfying W/Ws <= 5?

Q-Systems

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