Name or UF-ID: _____

Useful formulae:

Utilization:

- For Ethernet $u = \frac{1}{(1+5a)}$, where $a = \frac{Tprop}{Trans} = \frac{propagationDelay}{transmissionDelay}$
- For token ring (release after transmission) $u = \frac{1}{(1+\frac{a}{N})}$
- For token ring (release after reception) $u = \frac{1}{(1+a)}$
- For stop-and-wait: $u = \frac{1-p}{(1+2a)}$, where p is the probability that a frame is in error.

Utilization for sliding-window mechanisms with window of w:

- Go back N: $u = \frac{1-p}{1+2ap}$, if w fills the pipe, or $u = \frac{w(1-p)}{(1+2a)(1-p+wp)}$ otherwise
- Selective reject: $u = (1-p)$, if w fills the pipe, or $u = \frac{w(1-p)}{(1+2a)}$ otherwise