

## ECE 3700: Assignment 2b

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1. The propagation time can safely be ignored in most cases, as it's usually several orders of magnitude less than  $t_{trans}$ . Ex. On a 3km cable,  $t_{trans}$  will be approximately  $\frac{3000}{\frac{2}{3} * c}$  – on the order of  $10^{-5}$ .
2.
  - $N$ : The number of nodes
  - $p$ : The probability that any node will be transmitting at a given moment in time
  - $(1 - p)^{N-1}$ : The probability all nodes other than the one wanting to transmit are silent at the moment of transmission
3.
  - (See  $N$ ,  $p$ , and  $(1 - p)^{N-1}$  above)
  - $(1 - p)^N$ : The probability that no node wants to transmit at a given instant