

A group of N stations share a 56-kbps pure ALOHA (max throughput = 0.18) channel. Each station outputs a 1000-bit frame on an average of once every 100 sec, even if the previous one has not yet been sent (e.g., the stations can buffer outgoing frames). What is the maximum value of N ?

Maximum success rate = 18% = 0.18

For 56kbps total: $0.18 \cdot 56 = 10.08$ kbps

1000 bit per 100 seconds = 10 bits/second

$N = [10.08 \cdot 10^3] / 10 = \mathbf{1008}$