- 1 Mb/s link
- each user:
  - 100 kb/s when "active"
  - active 10% of time

$$N = 35 \qquad p = .1$$

r.v. $n \to$ # of users that are active

$$P(n > 10)$$

$$P(n=0) = (1-p)^{35} \quad , \quad P(n=1) = \binom{35}{1} p (1-p)^{35-1}$$

$$P(n=k) = \binom{35}{k} p^k (1-p)^{35-k}$$

$$P(n > 10) = 1 - P(n \le 10) = 1 - \left[P(n=0) + P(n=1) + \cdots + P(n=10) \right]$$

$$= 0.00004$$

$$\binom{n}{m} = \frac{n!}{m!(n-m)!} \qquad n \ge m$$