

EXAMPLE: $a = (\frac{1}{3}, \frac{1}{3}, \frac{1}{3}, 0, \dots)$

$$G(s) = E(s^X) = \frac{1}{3} \cdot s^0 + \frac{1}{3} s^1 + \frac{1}{3} s^2 = \frac{1}{3} + \frac{1}{3}s + \frac{1}{3}s^2$$

EXAMPLE: X HAS A GEOMETRIC DISTRIBUTION
WITH PARAMETER p :

p : PROB. OF SUCCESS

X : THE NUMBER OF TRIALS

BEFORE 1 SUCCESS

$$a = (p, p(1-p), p(1-p)^2, p(1-p)^3, \dots)$$

$$G(s) = E(s^X) = \sum_{k=0}^{\infty} s^k p (1-p)^k = p \sum_{k=0}^{\infty} (s(1-p))^k = \frac{p}{1-s(1-p)}$$
