

WHAT IS THE PROBABILITY THAT A MALE
LINE OF DESCENT WILL BECOME EXTINCT?

MODEL: OFFSPRING DISTRIBUTION:

$$a_0 = 0.48235$$

$$a_k = \alpha \beta^{k-1} \quad \alpha = 0.2126$$

$$G_x(s) = a_0 \cdot s^0 + \sum_{k=1}^{\infty} \alpha \beta^{k-1} s^k \quad \beta = 0.5893$$

$$= a_0 + s\alpha \sum_{k=1}^{\infty} (\beta s)^{k-1} = a_0 + \frac{\alpha s}{1 - \beta s}$$

$$G_x(s) = s \text{ GIVES } s = a_0 + \frac{\alpha s}{1 - \beta s}$$

$$s - \beta s^2 = a_0 - a_0 \beta s + \alpha s$$

-- SOLVE --

$$\underline{s = 0.819}$$