

PPE 6 Statistics.

Exercise 1.

Show that the standard deviation of the geometric distribution is given by

$$\frac{\sqrt{1-p}}{p}$$

Exercise 2.

Let G be an arbitrary distribution function and let U be a random variable with the uniform distribution $U(0, 1)$. Now put

$$y := G^{-1}(U)$$

Let x be an arbitrary real number.

(i). Show that

$$P(y \leq x) = G(x)$$

(ii). Why does this imply that y is a random variable with distribution G ?