Ghosh's staircase function

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Abstract
In this paper, I describe my staircase function.
The paper ends with "The End"

Introduction

Staircase functions are useful to many fields including economics, finance and science in general. In this paper, I describe my staircase function.

My staircase function

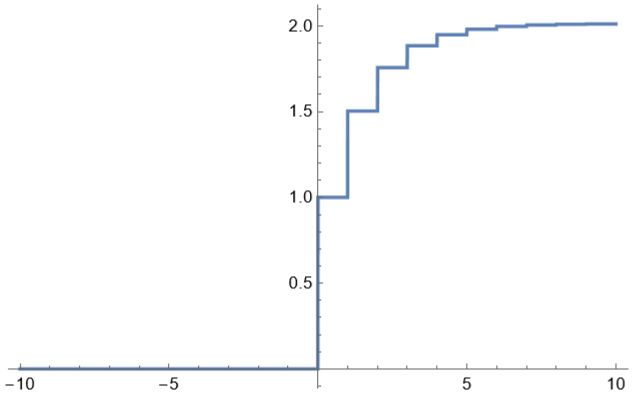
My staircase function is

$$g(n) = \sum_{i=0}^{n} \sum_{j=0}^{i} \frac{{}^{i}C_{j}}{e^{i} e^{j}} = \frac{e^{-2n}\left(e^{2n+2} - (1+e)^{n+1}\right)}{e^{2} - e - 1}$$

Properties of my staircase function

$$\lim_{n\to-\infty} g(n) = -\infty$$
$$\lim_{n\to 0} g(n) = 1$$
$$\lim_{n\to\infty} g(n) = \frac{e^2}{e^2-e-1}$$
$$\lim_{n\to-\infty} \frac{g(n+1)}{g(n)} = \frac{1+e}{e^2}$$
$$\lim_{n\to 0} \frac{g(n+1)}{g(n)} = 1 + \frac{1}{e} + \frac{1}{e^2}$$
$$\lim_{n\to\infty} \frac{g(n+1)}{g(n)} = 1$$
$$\lim_{n\to-\infty} \frac{g(n)}{g(n+1)} = \frac{e^2}{1+e}$$
$$\lim_{n\to 0} \frac{g(n)}{g(n+1)} = \frac{e^2}{1+e+e^2}$$
$$\lim_{n\to\infty} \frac{g(n)}{g(n+1)} = 1$$

Plot of my staircase function



The End