

Form C-110
Revised 7/1/55

Title _____

1. The first part of the paper is devoted to the study of the

properties of the function $f(x)$ defined by the equation

$$f(x) = \frac{1}{2} \left(f\left(\frac{x}{2}\right) + f\left(\frac{x+1}{2}\right) \right) \quad (1)$$

where $f(x)$ is a continuous function on the interval $[0, 1]$ and

$$f(0) = 0, \quad f(1) = 1. \quad (2)$$

It is known that the function $f(x)$ is unique and

$$f(x) = \frac{1}{2} \left(f\left(\frac{x}{2}\right) + f\left(\frac{x+1}{2}\right) \right) \quad (3)$$

$$f(x) = \frac{1}{2} \left(f\left(\frac{x}{2}\right) + f\left(\frac{x+1}{2}\right) \right) \quad (4)$$

where $f(x)$ is a continuous function on the interval $[0, 1]$ and

2.

It is known that the function $f(x)$ is unique and

$$f(x) = \frac{1}{2} \left(f\left(\frac{x}{2}\right) + f\left(\frac{x+1}{2}\right) \right) \quad (5)$$

3.

4.

5.

6.

7. The second part of the paper is devoted to the study of the

properties of the function $f(x)$ defined by the equation

$$f(x) = \frac{1}{2} \left(f\left(\frac{x}{2}\right) + f\left(\frac{x+1}{2}\right) \right) \quad (6)$$

where $f(x)$ is a continuous function on the interval $[0, 1]$ and