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Compositional Equations and New Description of Triangle & Circle

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Abstract: ***Explained what is the compositional arithmetic and how it works.***

Keywords: Compositional arithmetic, theorem of absiduus, measurement

1. Introduction

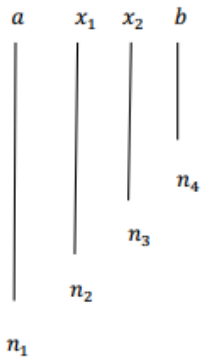
Compositional equations is an new mathematical discovering. Compositional equations (also can be say compositional arithmetic) is a new mathematical system being from numbers that giving us a new number. Compositional equations contains unique method and can be make some measurement with using algebra in this arithmetic. How to write is shown below.

$$b > a, \quad x_1 < x_2$$

$$\boxed{0 \rightarrow b\,;\, a = c}$$

It's called "b for a content" and must be count from content (a) to b.

n= Number of content (a) in examining number or numbers (a, x_1, x_2, b)



$$n_1 + n_2 + n_3 + n_4 = c$$

if b and a $\in Z^-$ $(b > a)$

$$0 \rightarrow b\,;\, a = c$$

$$c \in Z^+$$

if b and a $\in Z^+$ $(b > a)$

$$0 \rightarrow b\,;\, a = c$$

$$c \in Z^+$$

if b and a $\in Z^+$ $(b < a)$

$$0 \rightarrow b\,;\, a = c$$

$$c \in Z \text{ and } c = 0$$

if b and a $\in Z^-$ $(b > a)$

$$0 \rightarrow b\,;\, a = c$$

$$c \in Z \text{ and } c = 0$$

if b and a $\in Z$ $(b = a)$ $(b \neq 0)$

$$0 \rightarrow b\,;\, a = c$$

$$c = 1$$

Where Comes this Idea?

Theorem 1: Theorem of Absiduus

$$a \in Z^+,\ x_n \in Z^+ \text{ and } a = n$$

$$c \in R, \quad f(x) = c$$

$$0 \rightarrow a\,;\, 0 = 1$$

$$0 \rightarrow a\,;\, 1 = x_1$$

$$0 \rightarrow a\,;\, 2 = x_2$$

$$\vdots$$

$$0 \rightarrow a\,;\, 10 = x_{10}$$

$$0 \rightarrow a\,;\, n = x_n$$

$$1 \quad x_1 \quad x_2 \quad \cdots \quad x_n$$

$$(x_1 - 1) + (x_2 - x_1) + \cdots + (x_n - x_{10}) = \frac{d}{dx} f(x) = 0$$

This is showing of numbers content. Examining this situation about increase and decrease (so the difference between the numbers) comes truth of always must equal to 0. This theorem shows us constantly relation of numbers with 0.

A) Peculiarities in Compositional Arithmetic

$$x \in Z,\ x \neq 0$$

$$0 \rightarrow x\,;\, 0 = 1$$

$$x \in Z - \{0\}$$

$$0 \rightarrow x\,;\, x = 1$$

$$x \in Z^+$$

$$0 \rightarrow x\,;\, 1 = \frac{n(n+1)}{2}$$

$$x \in Z^+$$

$$0 \rightarrow 2x - 1\,;\, x = x$$

$$\forall - \{p\} \in Z^+ \text{ and } p \in Z^+ - \{1\}$$

$x \in Z^+$

$0 \to x\,;\ 1 = \dfrac{n(n+1)}{2}$

$x \in Z^+$

$0 \to 2x - 1\,;\ x = x$

$\forall - \{p\} \in Z^+ \text{ and } p \in Z^+ - \{1\}$

$a/p \in Z,\ f/p \in Z$

$0 \to a\,;\ p = x_1$

$0 \to b\,;\ p = x_1 + c$

$\vdots$

$0 \to f\,;\ p = y$

$y - x_1 = b$

$a, b \text{ and } x \in Z^+$

$0 \to a\,;\ 1 = x_1$

$0 \to b\,;\ 1 = x_2$

$x_2 - x_1 = b$

$0 \to a_2\,;\ b = x$

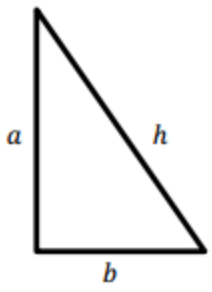
$0 \to a_1\,;\ [0 \to a_2\,;\ b].c\ = 0 \to a_1\,;\ x.c$

$0 \to a_2\,;\ b_1 = x_1\,,\ 0 \to a_3\,;\ b_2 = x_2$

$0 \to a_1\,;\ [0 \to a_2\,;\ b_1] + [0 \to a_3\,;\ b_2].c\ = 0 \to a_1\,;\ (x_1 + x_2).c$

B) Compositional Arithmetic and Measurement

Can be find hypotenuse and area of right triangle with this arithmetic. This is also mean can be make measurement without common formulas.



$a, b \text{ and } h \in Z$

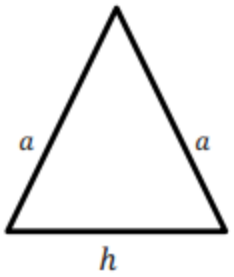
$if \quad a < b$

$0 \to a\,;\ 1 = z_1$

$0 \to b\,;\ 1 = z_2$

$h = (z_1 + z_2 + a^2)^{1/2}$

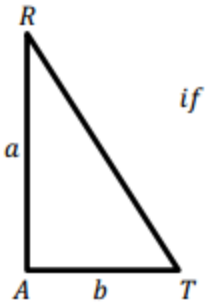
How to calculate the isosceles hypotenuse?



$a \text{ and } h \in Z$

$0 \to a\,;\ 1 = z_1$

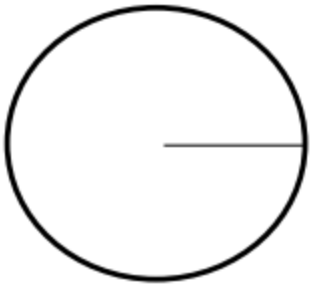
$h = \left(2z_1 + (a^2 - a)\right)^{1/2}$



$if\ a \text{ and } b \text{ consecutive } (a < b)$

$A(\widehat{RAT}) = 0 \to a\,;\ 1$

How can be find the area of circle?

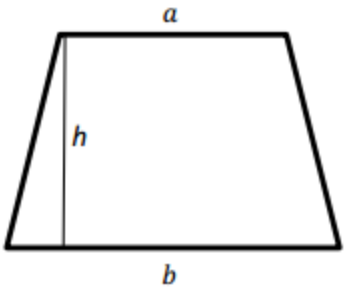


$if\ r \in Z$

$A = 0 \to 2r\,;\ 2 = \pi$

How can be calculate the area of trapezoid?

We will accept a, b and $h \in Z$. In this situation becomes the smallest shape's $a = 1,\ b = 3$ and $h = 1$. If we will accept a and b consecutive we will get this formulafor calculating areas:



$b - a = b - h = 2$

$0 \to (b-3) + b\ ;\ 2$

C) Piece & Incision Formula

Piece number for x incision

$x \in Z$

$(0 \to 2x - 1\ ;\ x) + (0 \to x\ ;\ 0)$

D) Formulation of Odd Numbers & Even Numbers

Odd Numbers Compositional Equation

$x \in Z^+,\ a \in Z^+$ and $x \neq 2a$

$0 \rightarrow 2x\ ;\ x$

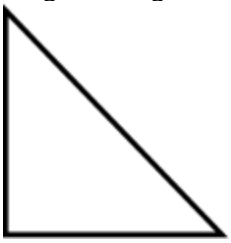
Even Numbers Compositional Equation

$x \in Z^+, a \in Z^+$ and $x = 2a$

$0 \rightarrow 2x\ ;\ x$

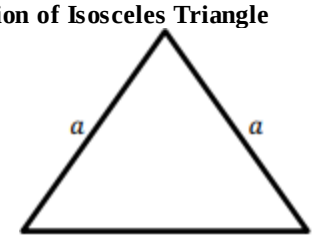
E) New Descriptions of Geometrical Shapes with Compositional Arithmetic

New Description of Right Triangle



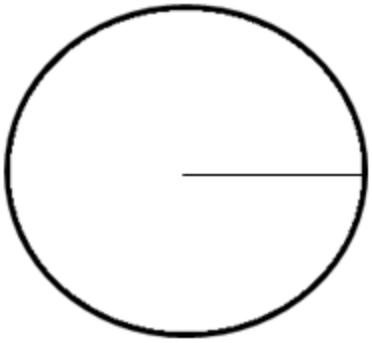
It is a three-sided geometric shape which the other edge can be determined using the compositional equations for the sides of perpendicular to each other and the area is small edge's compositional equation for 1 in the situation of the sides a and b are consecutive.

New Description of Isosceles Triangle



The geometric shape which the other edge can be determined with using isosceles edges compositional equation for 1.

New Description of Circle



The geometric shape which the two floors of the radius (r) give the area denominated of π of the compositional equation for the content of 2.