Neo Science Peer Reviewed Journal
Volume 8, April. 2023 ISSN (E): 2949-7701
www.neojournals.com

PROBLEMS OF IMPROVING THE METHODOLOGY FOR CALCULATING THE SIZES OF CERTAIN GEOMETRIC FORMS INSIDE AND OUTSIDE THE EGYPTIAN TRIANGLE

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Abstract:

Researches on the Mirs triangle, improvement of the methods of calculation of the dimensions of this triangle, and teaching issues are still relevant in the process of training engineer-pedagogues. Until now, the sizes of the Egyptian triangle, which belongs to the class of right triangles, have been analyzed by traditional calculation methods.
Determining the sizes of planimetric figures drawn inside and outside the Egyptian triangle was also studied through traditional calculation methods..

Keywords:

Introduction

The dimensions of the Egyptian triangle and the single dimension connecting the interior and exterior to it are not defined. The reason was the need to make the order of the Egyptian triangle and the corresponding table.

Based on the results of our observations, we would like to emphasize that the use of the so-called ordinal number for the Egyptian triangle, which represents the increase or decrease of the dimensions of this triangle in multiple ways, is important in the process of training engineer-pedagogues.

In the course of our research, we observed that there is another important aspect. It is also possible to find some of the quantities related to the variant of the Egyptian triangle located in any order using quantities that can be called constant quantities. Let's get to know them.

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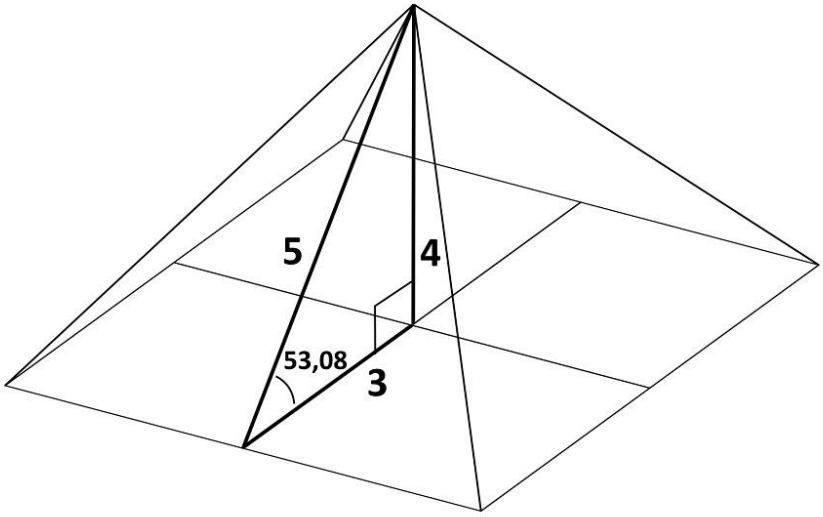

Figure 1

For example, the hypotenuse height of the Egyptian triangle is h_{cn}

$$h_{cn} = 2{,}4 \cdot n\ , \quad (1)$$

"n" in the formula is the ordinal number of the Egyptian triangle (F. A. Mamadaliev. "Egyptian Triangle" (Book 1) p. 9. Tashkent - 2018. "Renaissance Press".) Here "2.4" can be called the first constant of the Egyptian triangle.

We consider it permissible to give information about another constant:

$$R_n = 2{,}5 \cdot n\ , \quad (2)$$

(F. A. Mamadaliev. "Egyptian Triangle" (second book), page 21. Tashkent - 2018. "Renaissance Press".,) Here "n" in the formula is the ordinal number of the Egyptian triangle, "Rn" is the external radius of drawn circles;

Here, "2.5" is a constant and can be called the second constant of the Egyptian triangle.

Future science will find opportunities to use these constants in a wider scope.

It gives great positive results if it is used in various areas of the national economy, including research centers of heavy and light industries. Because, we have no doubt that the shapes taken from the Egyptian triangle will be available in the future.

Constant values have always been widely used in science and industry to simplify calculations, increase accuracy, and avoid errors in the selection of quantities, and they are still used for obvious reasons.

The dependence of the radius of the circle or circle drawn inside and outside the Egyptian triangle on the order number of this triangle can be found using the following formulas:

$$n = r_n\ , \quad (3)$$

(F. A. Mamadaliev. "Egyptian Triangle" (second book), p. 11. Tashkent - 2018. "Renaissance Press".)

In the formula:

n – ordinal number of the Egyptian triangle;

r_n – is the radius of the inner circles;

$$D_n = 5 \cdot n\ , \quad (4)$$

(F. A. Mamadaliev. "Egyptian Triangle" (second book), page 21. Tashkent - 2018. "Renaissance Press".)

Here: D_n – the diameter of the outer circle (circle);

(3) and (4) - the finding of the relationship opens up the possibility of finding very easy answers in solving many problems of this direction, even knowing the radius of the inner and outer circles without bothering with calculations.

To make it easier for you to imagine, here is a picture of the circle (circle) drawn inside and outside the Egyptian triangle:

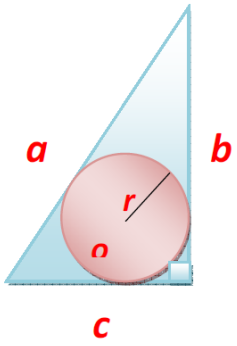

Figure 2

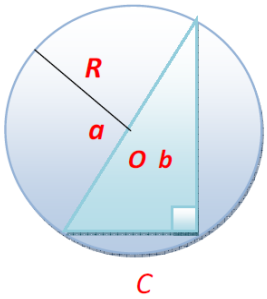

Figure 3

Figure 2 shows the location of the circle drawn inside, and the circle drawn outside in picture 3.

One of the main goals of our scientific research was to put into practice the concept of "Egyptian triangle chain", which has not been thought of in science yet. This innovation, that is, the chain of formulas, can be of great importance for the science of the future. The mathematical combination of these formulas is calculated - in the center of the "Egyptian triangle chain" is the ordinal number of this triangle "n".

All other sizes of the Egyptian triangle are placed on the right side of "n", and the sizes depending on the ordinal number of the geometric shapes drawn inside or outside this triangle are placed on its left side. The connection of mathematical relations consisting of a complex of such formulas shows the absolutely easy way to achieve the solution of problems without difficulties and without errors, since the desired quantities related to the Egyptian triangle are always quantitatively related to each other through "n".

We bring to your attention a part of the "Egyptian Triangle Chain":

$$\frac{l_n}{2\cdot\pi} = R_n : 5 = r_n = \boxed{n} = \frac{2}{P_{\Delta_n}} \cdot S_{\Delta_n} = \sqrt{\frac{S_{\Delta_n}}{6}} = \frac{P_{\Delta_n}}{12}, \quad (5)$$

It is possible to interrelate all the magnitudes related to the calculation process by means of the order number (n). It is not difficult to understand the interdependence of the magnitudes related to the Mirs triangle and other planimetric shapes drawn inside or outside it, and one of their magnitudes can be easily found through the other.

The List of Used Literature

1. Т. Жўраев ва бошқалар. Олий математика асослари. Т. «Ўзбекистон», 1995 й. I қисм.
2. Беклемишев Д.В. Курс аналитической геометрии и линейной алгебры. – М. Наука,1984 г.
3. Я. С. Бугров, С. М. Никольский. Элементы линейной алгебры и аналитической геометрии. М. «Наука», 1990 г.
4. F.A.Mamadaliyev, Misr uchburchagi (I, II, III kitoblar) T. «Renessans press», 2018 y.
5. F.A.Mamadaliev, Egyptian triangle (books I, II, III) T. «Renessans press», 2018 y.