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SOME METHODS OF TAKE OFF MUCH OF THE ISSUES OF THE OLYMPICS

Komiljon Kodirov Raximovich
Candidate of Physical and Mathematical Sciences, Senior Lecturer

So in Axmadjonov Oydinxon Soyibjon daughter
Teacher of Mathematics Department

Xayitgul Kubaevna Kodirov
Altyaryk District 4-Teacher Idum

ABSTRACT

Today, a radical change in the appearance of secondary schools of the country, their material-technical base of the national program to strengthen the fact that the execution of the result. This with along, the school of education and development aimed at the event in the republic of the sciences of olympic all stages organized without transfer and improvement, readers, each of our talents, to science , which is the interests, abilities, modern technical means to use get and independent thinking is the process of combination, readers of science in the olympic successful involved in that to ensure work is of great importance it has. For this reason, academic lyceums, specialized in mathematics and science state issues through the inclusion of subjects such as olympic withdrawals to the programs of secondary schools for talented pupils to increase interest in mathematics and science, and participating in science olympiad, which will help you take off example and told me about the issues [1-3].

In this article some examples of the issues related to the olympics come by you can take:

Example 1. $x^2+x+1=0,\ \ x\in C$ without it $x^{77}+x^{76}+x^{75}+x^{74}+x^{73}=?$

Withdrawals: we can write the given expression in the following form:

$$x^{77}+x^{76}+x^{75}+x^{74}+x^{73}=x^{73}(x^4+x^3+x^2+x+1)=x^{73}(x^4+x^3)$$

or $$x^{77}+x^{76}+x^{75}+x^{74}+x^{73}=x^{73}(x^3(x+1)) \quad (1)$$

As is known $a^3-b^3=(a-b)(a^2+ab+b^2)$ short breeding from the formula, $x^3-1=(x-1)(x^2+x+1)$ or $x^3-1=(x-1)\cdot 0,$ $x^3-1=0$ the fact that you ensure is obtained. Therefore, $x^3=0$ it's not. From the second side $x^2+x+1=0$ from equal, $x+1=-x^2$ and we can see (1) to the right side of equality put $x^{77}+x^{76}+x^{75}+x^{74}+x^{73}=x^{73}(x^3(x+1))=x^{76}(-x^2)=-x^{78}=-(x^3)^{26}=-(1)^{26}=-1$ is equal to that you will determine.

Example 2. $\dfrac{(x^2+x+1)(x^4+x^3+x^2+x+1)}{(x^3+x^2+x+1)}=1$ don't take off the equation.

Withdrawals: $x^n - y^n = (x-y)(x^{n-1} + x^{n-2}y + ... + y^{n-2}x + y^{n-1})$ I am building upon from nt using the formula, the fraction on the left side of the equation in the following form, we can write:

$$\frac{(1-x)(x^2+x+1)(1-x)(x^4+x^3+x^2+x+1)}{(1-x)^2(x^3+x^2+x+1)^2} = \frac{(1-x^3)(1-x^5)}{1-x^4}$$

. Form above and we will put out the expression to the equation to take off, you can bring the following equation:

$$\frac{(1-x^3)(1-x^5)}{1-x^4} = 1 \quad \text{or} \quad \frac{1-x^5-x^3+x^8)}{1-2x^4+x^8} = 1$$

In addition, $x^5 - 2x^4 + x^3 = 0$ or $x^3(x^2-2x+1) = 0$ in turn will ensure equality and $x^3(x-1)^2 = 0$ ensure equality. In addition, $x = 0$ or $x = 1$ stems from the fact that it is. Is that one of the roots found, $x = 1$ because foreign is the root of $x = 1$ the above equation $\frac{15}{16} = 1$ as will take place. Therefore, the $x = 0$ equation solution.

Example 3. $x^5 + (6-x)^5 = 1056$ Don't take off the equation.

Withdrawals: in the given equation $x - 6 = y$ and will put done in the form of a set $\begin{cases} x-6=y \\ x^5-y^5=1056 \end{cases}$ or $\begin{cases} x-y=6 \\ x^5-y^5=1056 \end{cases}$ a system of equations will yield. Newton's second equation in the system-building through the application of formula I, $(x-y)(x^4+x^3y+x^2y^2+xy^3+y^4) = 1056$ come stir and appearance $x - y = 6$ of that colossal that the system of equations of the second $x^4+x^3y+x^2y^2+xy^3+y^4 = 176$ appearance comes in. The yield replacement series and stir in the equation guruxlash come as a result of following appearance: $(x^2-y^2)^2 + 3x^2y^2 + x^3y + xy^3 = 176$

$$(x-y)^2(x+y)^2 + 3x^2y^2 + xy(x^2+y^2) - 176 = 0 \quad \text{or}$$

$36(x^2+y^2+2xy) + 3x^2y^2 + xy(x^2+y^2) - 176 = 0$. Originally the equation and guruxlaymiz $x - y$'s causing the ayirma kvadrati, you can put its value:

$$(x^2+y^2)(36+xy) + 72xy + 3x^2y^2 - 176 = 0$$

$((x-y)^2+2xy)(36+xy) + 72xy + 3x^2y^2 - 176 = 0$. As a result xy, compared to it will yield the following equation: $(36+2xy)(36+xy) + 72xy + 3x^2y^2 - 176 = 0$. In the equation $xy = t$, and will put that setting xy in relation to the following equation square you will be able to: $(36+2t)(36+t) + 72t + 3t^2 - 176 = 0$. The harvest of the equation square $t = -28, \quad t = -8$ roots, finding $xy = t$ the character to take off and will put out you will come again to this equation:

$\left[\begin{array}{l} xy = -28 \\ xy = -8 \end{array}\right.$, $\left[\begin{array}{l} x(x-6)+28=0 \\ x(x-6)+8=0 \end{array}\right.$. The first $x^2-6x+28=0$ equation diskreminanti negative, then it does not have real solutions. The second $x^2-6x+8=0$ equation $x=2,\quad x=4$ in the form of roots it's done.

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