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TRIGONOMETRIC EQUATIONS AND SOLVING METHODS

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Abstract : This in the article trigonometric equations solution non-standard methods about information given . Including both sides of the equation side one kind trigonometric to the function multiplication , both towards one odd number or one kind trigonometric function add and subtraction , proportion , mathematics analysis of elements , vectors scalar from the product use about information given and visols undress shown .

Key words : Function determination domain of the function limitation property , proportion , vector , scalar multiplication , number inequality , equations system , equations union .

Trigonometric equations to the appearance looking at solution one how much methods available . These instead of to put , to rationalize instead of substitutions , trigonometric equations different ways of solving private cases , artificial form from substitutions using trigonometric equations solution and etc. Some in cases given we know the equations methods with solution much complicated It will be . equations solution non-standard to the methods stop Let's go . Artificial form requiring replacement trigonometric equations in solution following from methods is used .

Trigonometry algebra and geometry in sciences important importance has is , is integrative to the feature have In this sense trigonometric equations solutions collection generalization and them choice in students difficulty gives birth to . Because students two variable linear equations solution methods and their application opportunities about enough for information has not to be possible . Two variable linear equations solution methods school mathematics in science deep It is also known that it cannot be studied . But specialized schools and high schools mathematics study in programs two variable linear equations occurs and they Diophantus equations (undefined equations) topics in the section is studied .

Two variable linear Diophantus equations solution technique trigonometric equation roots collection one how many when general roots the set separate in receiving application possible . Because selectively taken general roots set usually given equation solution as a result found all roots total satisfied for they two variable linear Diophantus equations roots set that obvious will be . Especially trigonometric equations given in the field when given roots collection separate in receiving this obvious It seems like this . in cases trigonometric equation roots only given to the sectors relevant those who were separate required to obtain and in this many in cases choice through results is taken . But choice and intuitive considerations always reliable expected the results It doesn't give . That's why for Diophantus equations and trigonometric of equations mutual relatedness study mathematics internal integration to strengthen service does . Mutually relevance trigonometric of equations solutions set first of all arithmetic progression organization to be able with explained .

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Trigonometric issues in solving , their general solutions find for arithmetic progressions in the form of written roots set compare need will be , because they either of the matter solution , or on the contrary to be possible .

Let's assume first $x_k = +1\ 5\ k$ progression k - hadi second $x_m = +3\ 7\ m$ progression m - to the extent equal let it be . k and m parameter how in values $1\ 5 + = + k\ 3\ 7\ m$ equality appropriate that we determine . k and m parameter so value find must arithmetic progressions found numbered values equal Let . As a result following whole with coefficient two variable linear equation harvest becomes : $5\ k - 7\ m = 2$. The equation whole numbers in the collection We solve the equation . variable in front of two from the coefficient we get the most small to value has that happened we choose (this is 5) and on the left second the limit is $7\ m = 5\ m + 2$ m such as we write and $5\ k - - 5\ m\ 2\ m - = + 2\ 5\ k\ 5\ m\ 2\ 2\ m$. The left side of the equation is 5 submissiveness for right side is also 5 division necessary : $2\ m + = 2\ 5\ s$, sZ . Thus , $2\ m - = - 5\ s\ 2$ from the equation m and s unknown whole numbers as above we will find .

Last of the equation variables in front of two from the coefficient we get the most small to value has what happened we choose (this is 2) and on the left second term $2\ m - - = - 4\ \sigma s\ 2$ $2\ m - = - 4\ ss$ in 2 forms We write . The left side of the equation is divided by 2 . multiple , therefore for $s - 2$ is also 2 multiple to be we need : $s - = 2\ 2\ p$, pZ . So as $s = +2\ p^2$ from the equation unknown s and p whole numbers We will find . From the unknowns one of coefficient 1 equal was equation to be taken with solution process finally So , $s = +2\ p\ 2$ equation p of optional whole in values will be an integer .

So as first progression $k = +7\ p\ 6$ in number present $x = + = +1\ 5\ k\ 1\ 5(7\ p + = 6)\ 35\ p + 31$, second progression $m = +5\ p\ 4$ in number present $x = +3\ 7\ m = +3\ 7(5\ p + = 4)\ 35\ p + 31$ is equal . $m = +5\ p\ 4$ and $k = +7\ p\ 6$, both progression general reaches the terms (values) . So , the general term is $x = 35\ p + 31$, $p = Z$.

Conclusion as to say possibly trigonometric equations roots collection in generalization whole with coefficient linear equations solution to the methods separately attention to give necessary . From the analyses this It was found that the students trigonometric of equations roots generalization mainly choice through done This is one how much calculations and It takes time . Therefore for trigonometric of equations general roots collection when choosing whole with coefficient linear equation solution from the methods use teacher and to students We believe that this will have a positive effect . Also , such approaches mathematics science internal mutual integration to provide service does .

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