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PROBLEMATIC EDUCATION METHOD WITH A SQUARE FROM THE EQUATION SYMMETRICAL FOURTH LEVEL EQUATION TRANSITION STAGES

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Annotation

This from work problematic education from the method used without square equation, biquadratic equation, square to the equation to be brought equation, symmetric II- degree equations and to them problematic questions to put stages statement Their to oneself originality problematic the question difficulty level exceed is going.

Keywords

Square equation , education methods , problematic education , problematic question , symmetrical equation , derived equation .

High " Mathematics in education " and his/her education "Methodology is important " importance profession They will, example as the analysis method, synthesis method, and generalization method, and this like to bring possible [1].

the school textbook

$ax^2 + bx + c = 0$ (1)

(1) Square equation from being taught then

(2) $ax^4 + bx + c = 0$ (2)

the biquadratic equation to solve right is coming.

Biquadratic equation to solve problematic education and in it problematic situation through solution process seeing Let's go.

Teacher: The equation $6x^4 + 5x^2 + 1 = 0$ how what do we call an equation?

Students: 4 th grade equation.

Teacher : Correct . so it can also be said but in mathematics this biquadratic equation it is said and his/her general looks like $ax^4 + bx^2 + c = 0$ will be .

Students : We also have an equation we solved They say . Here to know related problematic situation harvest It will be .

Teacher: If we define $x^2 = y$, then x^4 inside how shall we mark?

Students: Reflection so, $x^4 = y^2$ that harvest they do.

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Teacher: This is an equation. Current to the equation according to how is determined.

Students say : $6y^2 + 5y + 1 = 0$. **[** 1]

this basis problematic education, problematic situation create through biquadratic equation solved.

Now the following equation let's bring

$$(x - \frac{1}{x})^2 - 5(x - \frac{1}{x}) + 4 = 0 \ (3)$$

How is this? Equation said the question in the middle if we throw to know related problematic situation harvest will be. From our experience come "How is that ? " designation "Shall we enter ? " is problematic to ask a question possible.

$(x - \frac{1}{x})^2 = y$ set if we enter how equation harvest will it be? Problematic to ask a question possible.

$(x - \frac{1}{x})^2 = y$ from the definition then equation (3) $y^2 - 5y + 4 = 0$ into equation (3.1) This equation comes from the solution possible. Its root four, two , or real root there is not to be possible.

This issue further raises,

$$x^2 + \frac{1}{x^2} - 5(x - \frac{1}{x}) + 4 = 0 \ (4)$$

equation to bring possible.

Equation (4) How solved said problematic question the students It makes you think.

If $x^2 + \frac{1}{x^2}(x - \frac{1}{x})$ of the square in the form of expressing give said question if given, to them difficulty It doesn't wake up. Because

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

to look takes.

Using (5), we can solve equation (4)

$$(x - \frac{1}{x})^2 - 5(X - \frac{1}{x}) + 6 = 0 \ (6)$$

To the equation comes and it is square to the equation brought solved.

$$x^4 - 5x^3 + 4x^2 + 5x + 1 = 0 \ (7)$$

To the equation Let's look at (7) students' fourth level called an equation They know. But in the form of a (7) equation, how is solved. First not solved They say. The students say " (7) both sides x^2 become if sent what " Will it be ?" he asked. If students' actions having done this

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$x^2-5x+4+\frac{5}{x}+\frac{1}{x^2}=0$ (8)

They get the equation. Students will see (4) please bring it if you enter him/her.

$x^2+\frac{1}{x^2}-5\left(x-\frac{1}{x}\right)+4=0$ (9)

To the appearance they bring and they him/her before what they took off into account take this last Solve the equation as well. They will get.

So, we have the following stages done we increased :

Square equation → biquadratic equation → square to the equation incoming

$x^{2}+\frac{1}{x^2}-5(x-\frac{1}{x})+4=0$

$x^{4}-1-5x^{3}+5x+4x^{2}=0$

$x^{4}-5x^{3}+4x^{2}+5x+1=0$ (5)

$x^2+\frac{1}{x^2}-5\left(x-\frac{1}{x}\right)+4=0$ equations in the form

→ $ax^{4}+bx^{3}+cx^{2}+bx+a=0$ steps done We have increased . In these stages, problematic situations problematic question asked on was put in. So, the square equation from the stage

$ax^{4}+bx^{3}+cx^{2}+bx+a=0$ (10)

symmetrical to the equation to go stage problematic education method with to take away, to take away questions based on application good result We assume that it will give. However, this step by step take to go process square translation

$ax^{4}+bx^{3}+cx^{2}+bx+e=0$ (11)

in the form of equations for It's not a side issue. Next scientific in our research (11) is to reduce equation (10) stage done increase the goal as we get.

Conclusion . Problematic education method with biquadratic from the equation symmetrical Fourth level up to the stage was equations solution stage and in them, to oneself, characteristics illuminating was given. Fourth-level equations all of this in a way undress not to be to us known.

From him outside above cited examples exactly from the stairs to lift or on the contrary from the stairs step by step to descend similar student in person interest It wakes up . At the same time, it looks like this . rising going mutual related issues or problems class study or them to create foundation thinks it will be authors . Especially this in process problematic education used to oneself is typical .

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