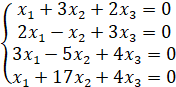
**Independent Work**

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***Group: 604.20E***

***Example 5***

Solve the homogeneous linear equations:



**To solve the system of linear equations, we can use Gaussisan elimination.**

**Let’s write the system in Row-Echelon Form.**

**Add -2 times the first row to the second row.**

**Add -3 times the first row to the third row.**

**Subtract the 1st row from the 4th row.**

***Notation***:

**Multiplay the second row by – 1/7**

***Notation:***

**Add -3 times the second row to the first row.**

**Substract the third row from -14 times the second row.**

***Notation:***

**Add -14 times the second row to the fourth row.**

***Notation:***

**= 0 = 0**

**= - = -**

**To represent the solution, choose to be the free variable and represent it by the parameter t.**

**Using the parameter t = , the solution set is:**

**,**

**,**

***, t R***

***This system of linear equations has an infinite number of solutions.***

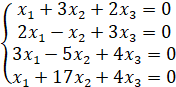
***The system is consistent system.***

***Here are some solutions:***

***If t (or ) will be 14, our solutions are:***

***= -22, = -2, = 14.***

***Let's rewrite the equation to make sure the solutions.***



***-22 + 3(-2) + 2\*14 = 0***

***2\*(-22) + 2 + 3\*14 = 0***

***3\*(-22) -5\*(-2) + 4\*14 =0***

***-22 + 17\*(-2) + 4\*14 = 0***

***The solutions satisfying us.***