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|  | TEACHER’S ACTIVITY | STUDENT’S ACTIVITY |
| PRESENTATION | The teacher presents the topic with the aid of these steps. |  |
| STEP 1 | **IDENTIFICATION OF PRIOR IDEA** |  |
|  | The teacher asks the students to briefly explain how a system of linear equations can be solved simultaneously. | The students answer the question. |
| STEP 2 | **EXPLORATION** |  |
|  | The teacher explores further by tasking the students to solve the system of linear equations below:  2*x* *y* 9  3*x* – *y* 1 | The students solve the problem. |
| STEP 3 | **DISCUSSION** |  |
|  | **System of linear equations using determinant**  A system of linear equations having two and three variables or unknowns can be easily solved using determinants or Cramer’s rule. This rule involves converting a system of linear equations into a matrix equation.  Consider a system of linear equations with variables *x*1, *x*2, *x*3, …, *xn* written in the matrix form AX B. Here,  A coefficient matrix (must be a square matrix).  X column matrix with variables.  B column matrix with the constants (which are on the right side of the equations).  Now, we must find the determinants as or , *x*1, *x*2, *x*3, …, *xn*.  Thus, *x*1 ; *x*2 ; *x*3 ;…; *xn* | The students listen to the teacher and copy the note. |
| STEP 4 | **APPLICATION** |  |
|  | Example 1  Solve the following system of equations using Cramer’s rule:  2*x* *y* 5  *x* *y* 4  Solution  Given,  2*x* *y* 5 and *x* *y* 4  Let us write these equations in the form AX B.      2(1) – 1(-1)  2 1  3  *x*  5(1) – 4(-1)  5 4  *x* 9  *y*  4(2) – 1(5)  8 5  *y* 3  Therefore, *x* 3 and *y* 1  Example 2  Solve the following system of equations using Cramer’s rule.  *x* *y* *z* 6  *y* 3*z* 11  *x* – 2*y* *z* 0  Solution  Given,  *x* *y* *z* 6, *y* 3*z* 11, and *x* – 2*y* *z* 0  Let us write these equations in the form AX B.      1 – 1 1  1 – 1 1  1(7) – 1(-3) 1(-1)  9  *x*  6 – 1 1  6 – 1 1  6(7) – 1(11) 1(-22)  42 – 11 – 22  *x* 9  *y*  1 – 6 1  1 – 6 1  1(11) – 6(-3) 1(-11)  11 18 – 11  *y* 18  *z*  1 – 1 6  1 – 1 6  1(22) – 1(-11) 6(-1)  22 11 – 6  *z* 27  *x* 1  *y* 2  *z* 3 | The students listen to the teacher and ask questions. |
| STEP 5 | **EVALUATION** |  |
|  | The teacher evaluates the lesson with the question below:  Use determinant method to solve the system of equations.  *x* *y* 2  2*x* 5*y* 18 | The students solve the questions. |
| CONCLUSION | The teacher concludes the lesson by giving correction to the evaluation question. |  |
| ASSIGNMENT | Use Cramer’s rule to solve the systems of equations:  7*x* – 3*y* -61  11*x* 3*y* -65 |  |
| REFERENCE | New Concept Mathematics for senior secondary school book 3 by H N Odogwu, et al. |  |