Notas de enseñanza

Topic 1-2

Suggestions for the teacher

Form the work teams (in pairs) and verify that they all are participating in complete the activity. Do not answer the student's questions; the professor must assume the role of a counselor. First they work individually and then compare their answers with their teammates. In the first part, allow the students to use their electronic devices to determine possible routes to get to the University.

Topic 3-5

Suggestions for the teacher

- It is important to highlight the construction of models as a central part of the course. For the students are not used to that language and it has to be emphasized, just like the relations between variables.
- It is also very important to motivate them to design a model because the student usually is used to obey instructions and be the main figure in the solution.

La videolección *MIT BLOSSOMS* se realizará durante la clase donde se deberán de realizar diversas pausas para que los alumnos puedan avanzar en las actividades que corresponden a cada sección.

- En el caso de la presente actividad puede conocer más sobre el *MIT BLOSSOMS* desde: https://blossoms.mit.edu/about
- Acceso a videolección Actividad 2(temas 3, 4 y 5): https://blossoms.mit.edu/videos/files/videos/quadratic_equation_it%E2%80%99s_hip_be_squared_english_flash
- Descargar la guía de la videolección desde: https://blossoms.mit.edu/sites/default/files/video/download/questions-42512.pdf
- Se recomienda que el profesor vea todo el video para su clase correspondiente a la videolección.

Topic 6-7

Suggestions for the teacher

- In the first part allow the students to use their electronic equipment, such as calculators, computers or tablets, to determine the value of an imaginary number; the students can get one of the following “error”, “invalid entrance”, and “indefinite” answers. Leave the students to reach conclusions and build or appreciate a definition through this results that will seem incongruent and with no sense.
- In the second part, highlight the applications of the imaginary numbers and in the third part leave the students to apply the concept, as well as the theorems to get results, interpretations, and conclusions on a population model where a polynomial function can be seen.

Topic 8-10

Suggestions for the teacher

- It is important to highlight the construction of the models as central part of the course, as well as the relations among variables that are part of the language that the students in general do not handle and which we have to emphasize.
- The motivation part in daring to design a model is very important because the student is used to follow instructions and be the protagonist of the solution. We also have to guide them in the interpretation of Part 2 in the activity, they may arrive to class with different models and applications, but this variety will be very rich in their meaningful learning process.

Topic 11-12

Suggestions for the teacher

- In the first part of the activity it is important to let the students discover how by drawing the pairs of lines a graphic solution is obtained, which may not yet have a specific name. Besides, in this first part the student must notice that the graphic and the analytical solution will be the same.
- In the second part they must be left to practice each method and distinguish which will be the simplest for each one of them. In addition, it is suggested to make them notice that the results should be the same regardless of the method chosen to solve the 2x2 systems of linear equations.
- Similarly for the third part, we let them to practice each method and distinguish which one will be the simplest for each one of them. In addition, it is suggested to make them notice that the results should be the same regardless of the method chosen to solve the 3x3 systems of linear equations.
- In the 3 parts of the activity they must be guided in the interpretation and implementation of the activity, perhaps they will arrive to class with different steps for the solution, but this variety is very rich in its meaningful learning.
- It is recommended that the teacher brings a backup scientific calculator and more practice exercises in case the student requires them.

Topic 13-15

Suggestions for the teacher

- In the first part of the activity it is important to let students discover the concept of matrix and realize they use it daily to store data in an orderly manner. Besides, it is relevant for them to familiarize with the matrix notation as to the allocation of the position of the elements.
- In the second part let them practice each method and distinguish what will be the simplest for each one of them. Besides, it is suggested that you let them know that the results should be the same regardless of the method chosen to solve the 2x2 and 3x3 systems of linear equations.
- In the 3 parts of the activity they must be guided in the interpretation and implementation of the activity, perhaps they come to class with different solving steps, but this variety is very rich in its meaningful learning.
- In this same part let them model situations using systems of 2x2 and 3x3 equations. Furthermore, let them apply the concepts of matrix, determinant, Cramer's rule and Gauss for solving these systems.
- It is recommended that the teacher carries a backup scientific calculator and more practice exercises in case the student requires them.