

Concept – Solving a nonlinear system

Thought #1 – The Magic Matrix Method only works with linear systems ($Ax + By + Cz + Dw = E$)

Thought #2 – ANY system can be solved with a graphing method (as long as you can graph the equations.)

Thought #3 – ANY system can be solved with a substitution method (as long as you can isolate one of the equations.)

Objective – Clearly show evidence that you can solve the following system using both graphing and substitution.

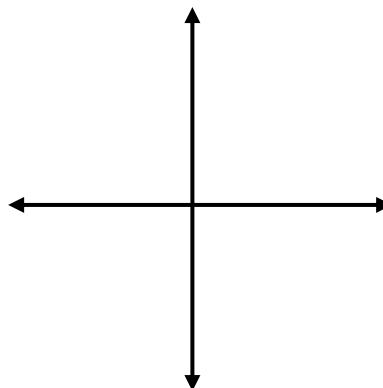
Substitution Method

- Isolate a variable (most likely "y") in one of the equations.
- Substitute.
- You are now solving a "polynomial equation"... think FACTOR!

$$\begin{cases} x + y = 4 \\ x^2 + y^2 - 4x = 0 \end{cases}$$

Graphing Method

- Carefully solve both equations for y= (don't forget the \pm)
- You should be graphing a circle and line!
- Show how you used your graph to get the solutions



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