

Quiz(Chapter 2)

1. Solve the following linear equation by Substitution method and then plot the graph in python using numpy and matplotlib.

$$X + Y = 6 \quad \text{and} \quad 2x + 3y = 16$$

2. Solve the following linear equation by Elimination method and then plot the graph in python using numpy and matplotlib.

$$4X - 3Y = 25 \quad \text{and} \quad -3x + 8y = 10$$

- 3.

Jill designs solar panels as a hobby.

On April 1st, Jill's "Mark I" design begins generating power: 1 kJ/day.

On May 1st, her "Mark II" design begins generating 4 kJ of power per day.

1. What day is it when Jill's Mark II design has generated as much total energy as the Mark I design?
 2. How much total energy have both generated by that day?
 3. What would the solutions to (1.) and (2). be if Mark II design generated 1kJ of power per day?
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4. Calculate the L2 norm of this vector $a=[35,40,45]$ using its formula also used the numpy, tensorflow and pytorch function to solve it in python.
 5. Calculate the invrse of 3x3 matrix of your own choice. Also find the inverse in numpy, tensorflow and pytorch function.
 6. Calculate the dot product of 3 x 3 matrix of your own choice. Also find dot product using numpy, tensorflow and pytorch function.
 7. plot the curvey graph using this equation ($y=x^2+2x+2$) and find the point(infinitesimal calculus) where graph accuracy will be the highest.
 8. Create examples of zero vector, one vector, square matrix, diagonal matrix, identity matrix and symmetric matrix one by one and represent vectors and matrices with numpy.