3. To convert any point of matlab into coordinate system of graph. We first find the coordinates of matlab at the point (0,635) of the graph - say the coordinates are (a_1, b_1) Next we find coordinates at the point (10,635) of the graph and let its coordinates in matlab be (a_2, b_1) - see here that the y coordinates of matlab for both the points are same. Thus 10 units of graph correspond to $b_2 - b_1$ units of matlab.

Thus if we have the x coordinates as a_x
Then corresponding coordinate in matlab is

$$A_x = \left(\frac{a_x - a_1}{a_2 - a_1} \times 10\right) + 0$$

$$A_x = \frac{(a_x - a_1)}{a_2 - a_1} \times 10$$

- similarly let (0,635) on matlab be (a_1, b_3)
Then any y coordinate by on matlab can be converted to Graph coordinates as

$$B_y \Rightarrow -\left(\frac{b_y - b_1}{b_3 - b_1}\right) \times 10 + 635$$

minus as y coordinates decrease upwards.

$$\therefore (a_x, b_y) \xrightarrow{\text{graph coordinates}} \left(\left(\frac{a_x - a_1}{a_2 - a_1}\right) \times 10,\ 635 - 10\left(\frac{b_y - b_1}{b_3 - b_1}\right)\right)$$