1. Please write a program to show up with 10 balls and a container. You may use a paragraph element (<p>) as the container. Remember to set its style of display as block, to give a background color, and to move it to the upper left position of the window. The dimension of the container can be 640 px by 480 px or other sizes. Then, use Math.random() function to put your 10 balls randomly on the container. (Every time you open the html file, you will see the balls at different positions.) As a second step, please provide the user an input field to select for drawing a pyramid of 1, 2, 3, or 4 rows. When the user selected the number of rows for drawing a pyramid, you have to move the ball to the center of the continer and to arrange the ball as a pyramid. If the user chooses one row, you moved 1 ball to the center. If the user chooses two rows, you move 4 balls to the center with one on the first row and the other three on the second row. (50%)
2. Please prepare a 2X2 matrix (like ) to multiply on a 2X1 matrix (like ). The result of the multiplication of is the 2X1 matrix of . You don’t need to show the result while the multiplication function will be used later. Please prepare an input field of angle () for the user. The user can input an angle () with **degree** (not **radian**) in the field. Then, you just change the angle () to a value with the unit of **radian** and present a result in the window to show the 2X2 matrix of . Please show the values for that matrix on the window and it’s better to show the matrix in four html input fields. Additionally, you have to calculate the multiplication of the 2X2 matrix on the two specified 2X1 matrices of and . Please show the result of the two calculation. As for the result of , please use p.innerHTML to show the output as “The multiplication of the specified 2X2 matrix on (1, 0) is (a1, b1) and that on (0, 1) is (a2, b2)”. To check your program, you can input an angle of 90 degree and you shall get the results of (0, 1) and (-1, 0). (50%)