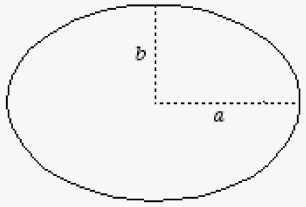
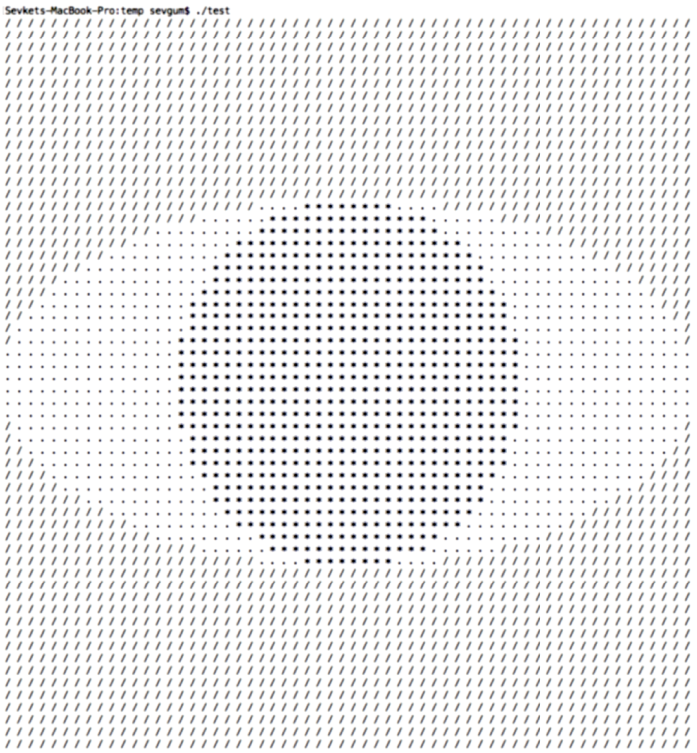
EE204 Final Q1of4, July 21 2020. To be submitted via cms.iyte.edu.tr from 10:05 to 10:30.
Note:Your answer should be **STRICTLY your own work. Suspicious similarities will be thoroughly checked and penalized.** By answering you will be accepting this statement:
"I pledge my honor, I did not receive or give any unauthorized assistance on this exam."

FinalQ1 (25 pts)
(Submission file name: FinalQ1.c)
Write a C program that displays a pattern shown below, using only printf statements (**without** using arrays) to print 60 characters in 60 lines. Printed characters are "/ ", ". ", "* ".
Hint:Equation of an ellipse centered at (h,k):

$$\frac{(x-h)^2}{a^2}+\frac{(y-k)^2}{b^2}=1$$





Bonus: (10extra pts if runs perfectly, 0 otherwise)
(Submission file name: FinalQ1bonus.c)
Write a C program that displays a pattern shown below, which is a 45 degrees rotated version of part a.

Hint: a 2D point (x,y)' can be rotated by angle θ, around point (x_c,y_c)' by using:

$$\begin{bmatrix} x_{rotated} \\ y_{rotated} \end{bmatrix} = \begin{bmatrix} \cos(\theta) & \sin(\theta) \\ -\sin(\theta) & \cos(\theta) \end{bmatrix} \begin{bmatrix} (y-x_c) \\ (y-y_c) \end{bmatrix} + \begin{bmatrix} x_c \\ y_c \end{bmatrix}$$

cos(45) = sin(45) ~= 0.707