Problem 1A

X1	X2	X1^2	OUTPUT
1	1	1	Class 1
1	0	1	Class 1
0	1	0	Class 2
0	0	0	Class 2

Problem 1B

A feature map allows us to, by adding an extra dimension, separate the data into distinct classes that are easier to not only visualize but interpret as it provides a definite separation in the data.

Problem 1C

X1	X2	X3	OUTPUT
1	1	0	Class 1
1	0	1	Class 2
0	1	1	Class 2
0	0	0	Class 1

Problem 1D