**Problem 1. Support Vector Machines**

First map from [x1, x2] to [x1, x1x2] as following:

Negative: [-1,-1] maps to [-1,+1]

Positive: [-1, +1] maps to [-1, -1]

Positive: [+1, -1] maps to [+1, -1]

Negative: [+1, +1] maps to [+1, +1]

Here, the positive examples have x1x2 equals to -1 and negative examples have x1x2 equals to +1. Therefore, the maximal margin separator is x1x2 = 0, and the margin is 1.

