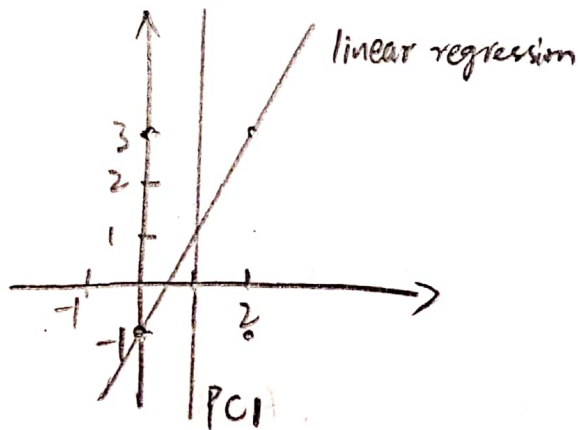


Section 5.

1. The range of sigmoid is 0 to 1, and is not a linear function, cannot effectively represent the large $\|\theta^T x\|$.

2.

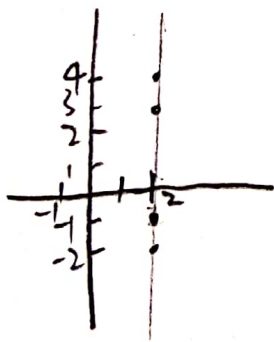
1).



Not the same direction.

Linear regression minimize $y - \theta^T x$, PCA minimize the distance of point (x, y) to the line.

2)



The slope is close to infinity but not.



3. No.

If θ_0 is removed, the model always contains the origin.

However this may not true for some cases.

