

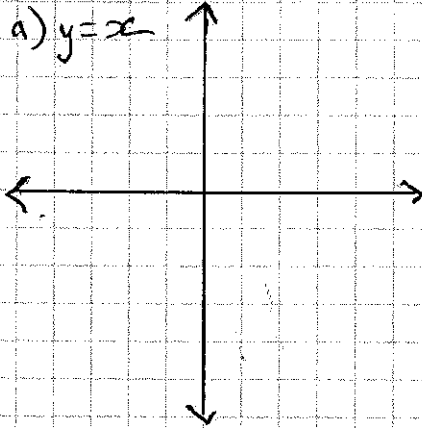
Make predictions with machine learning

Week 1 exercises

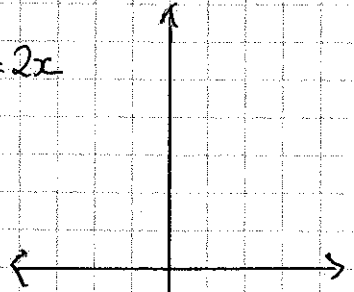
① Let's draw some lines.

Remember $y = mx + b$?

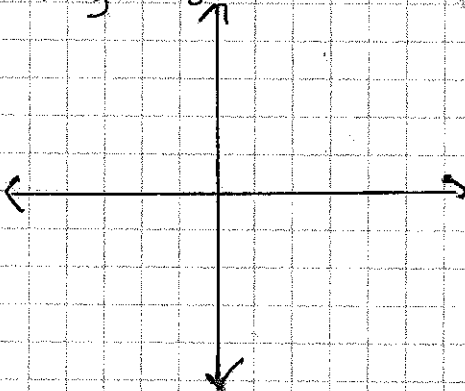
a) $y = x$



b) $y = 2x$

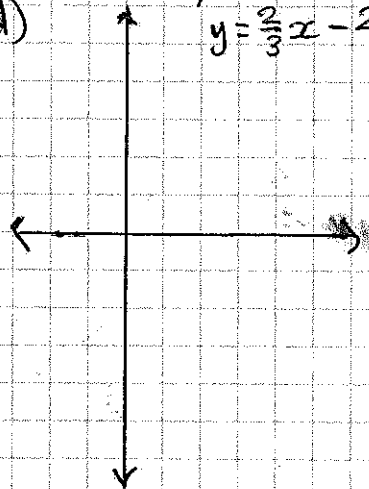


e) $y = -\frac{1}{3}x$



d)

$y = \frac{2}{3}x - 2$



② Let's make friends with our cost function.

Recall:

$$J(\theta_0, \theta_1) = \frac{1}{2m} \sum_{i=1}^m (h_{\theta}(x^{(i)}) - y^{(i)})^2$$

$$h_{\theta}(x) = \theta_0 + \theta_1 x$$

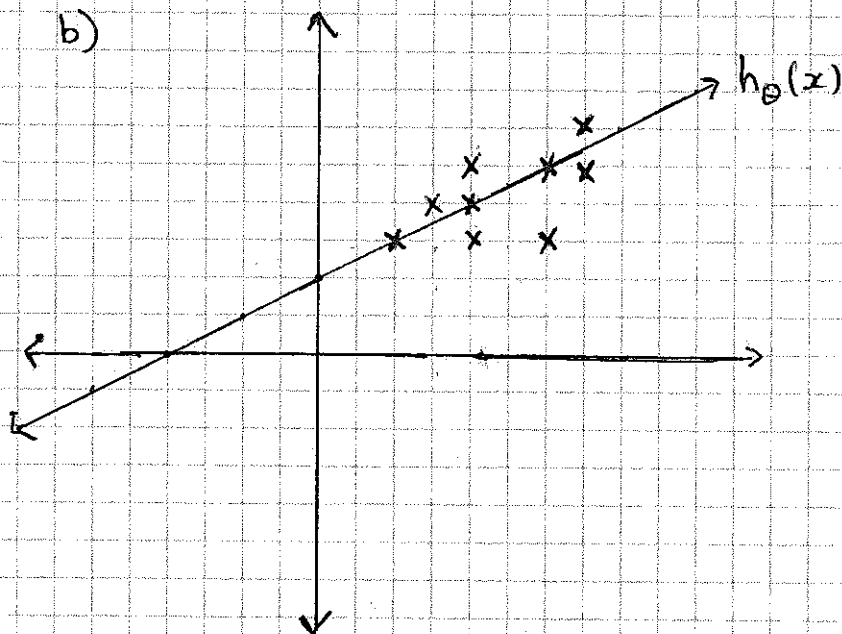
a) But first, let's say

i	$h_{\theta}(x^{(i)})$	y
1	6	5
2	10	8
3	2	3
4	1	2
5	5	5

What is the value of $J(\theta_0, \theta_1)$?

answer:

b)



② b)

i) what is $h_{\theta}(x)$? (It has the form $h_{\theta}(x) = \theta_0 + \theta_1 x$)

answer:

$h_{\theta}(x) =$

ii) Here is the ^{training} data for graph ② b)

x_1	y	$h_{\theta}(x)$
2	3	_____
3	4	_____
4	3	_____
4	4	_____
4	5	_____
6	3	_____
6	5	_____
7	5	_____
7	6	_____

Q:
What is the value
of $J(\theta_0, \theta_1)$?

Answer: