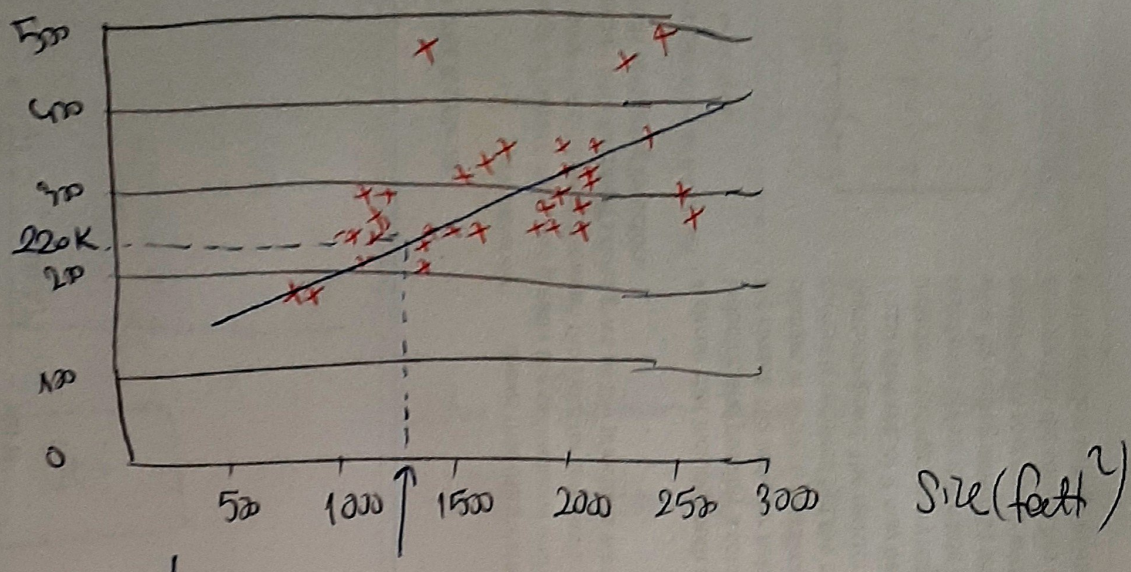
→ Linear regression with one variable

Lecture 2.1

Model representation

Housing Prices (Portland, OR)



Supervised Learning

Given the "right answer" for each example in the data.

Regression problem

Predict real-valued output

Classification: Discrete-valued output

More formally in supervised learning we have a data set and this data set is called a training set

Training set of housing prices (Portland, OR)

Size in feet² (x)	Price ($) in 1000's ($y$)
2104	460
1416	232
1534	315
852	178
⋮	⋮

$m = 47$

m = number of training examples

x's = "input" variable / features

y's = "output" variable / "target" variable

(x, y) - one training example

$(x^{(i)}, y^{(i)})$ - i^{th} training example

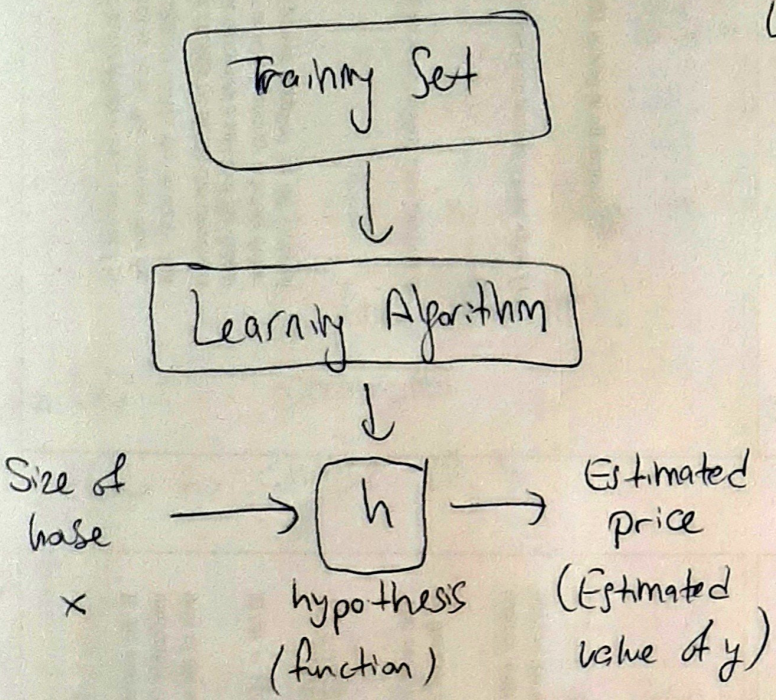
i is just index, not exponentiation!

Exp:

$x^{(1)} = 2104$

$x^{(2)} = 1416$

$y^{(1)} = 460$



h maps from x's to y's

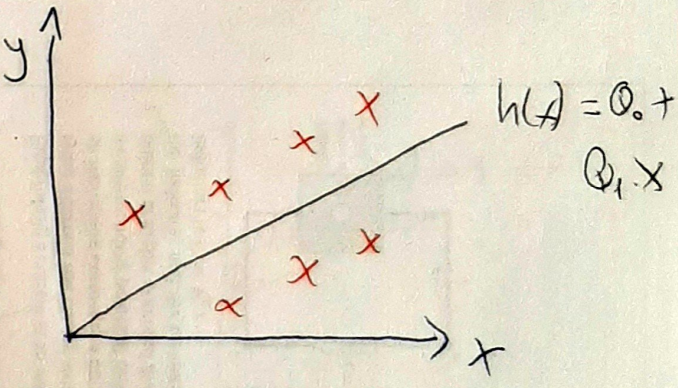
Why function name is hypothesis?

→ It's theminology

How do we represent h?

$h_\theta(x) = \theta_0 + \theta_1 \cdot x$

Shorthand: $h(x)$



Linear regression with one variable

Univariate linear regression

↳ one variable.