Regression

- Models relationship between an unknown parameter *y* and one or more variables denoted *X*

- Find a function f which can be used to predict y given X - ie find f such that y = f(X)

- In Linear Regression (X, f(X)) is the graph of a line ie y = aX + b

- In Polynomial Regression of degree n, f is an nth degree polynomial

Very Simple Example

- The following is a table for housing price vs. square feet of living space and number of bedrooms

$100,200	100 sq feet	2 bedrooms
$200,500	200 sq feet	5 bedrooms

In this case it is easy to find f given X = (x1,x2)

cost of house with x1 sq feet and x2 bedrooms =

f(X) = $100(x1) + $100(x2)