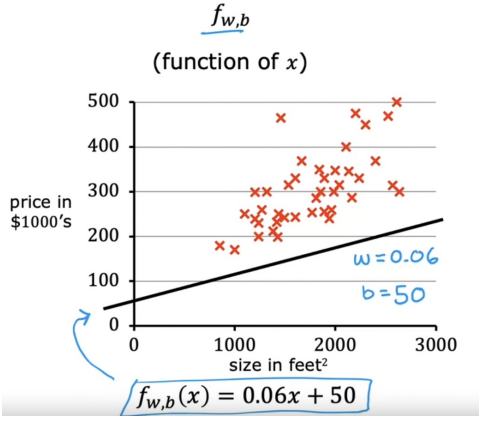
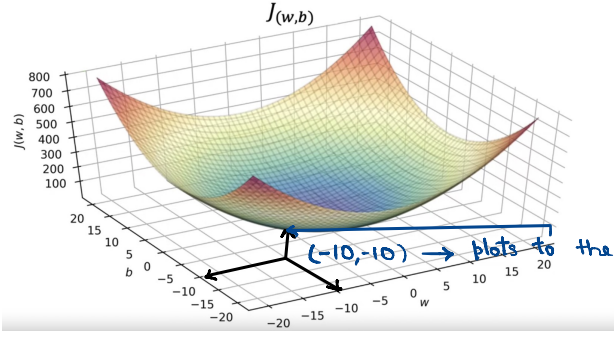
Looking at the cost function data from a visual perspective.

In this case, we will use w, b as parameters.



← Suppose, we have this data model.

Plotting the cost function J(w)

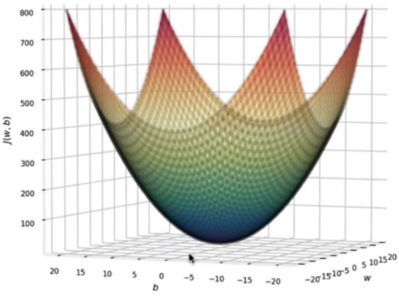


3-D surface plot because of two variables.

3D surface plot

$J(w, b)$

[You can rotate this figure]



← Graph looks somewhat like this from vertical perspective.

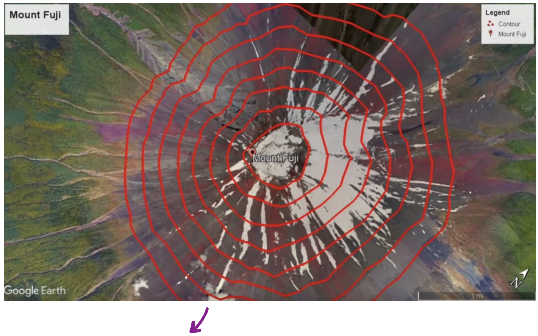
CONTOUR PLOTTING

Contours can be used to view 3-D graphs in a 2-D way. They are basically horizontal slices in a topographical map.

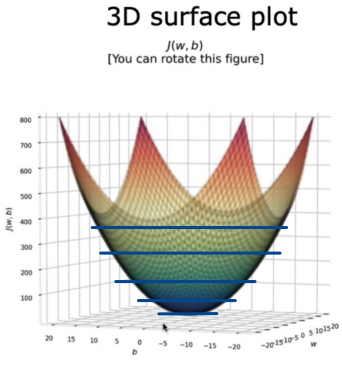
View of a mountain

→

Turns into a 2-D view

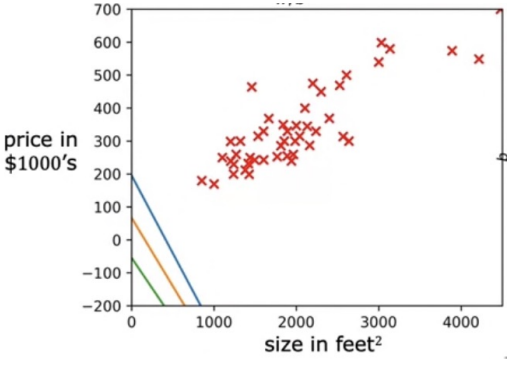


Each circular slice  represents regions of the same height



To get a contour map, just slice off surfaces of the 3-D graph.

$f_{w,b}$



$J(w)$