a curve fits this data better than a line.

$$f_{w,b}(x) = w_1 x + w_2 x^2 + b$$

↑ size   ↑ size²

price y

size →

this model doesn't really make sense as a quadratic fⁿ eventually goes down.

big houses usually ↗ cost more

price y
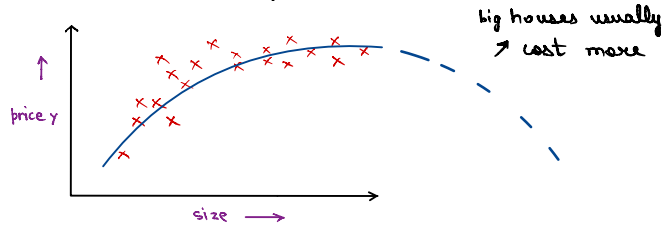
size →

we can use a cubic function

price y

size →

$$f_{w,b}(x) = w_1 x + w_2 x^2 + w_3 x^3 + b$$

↑ size   ↑ size²   ↑ size³
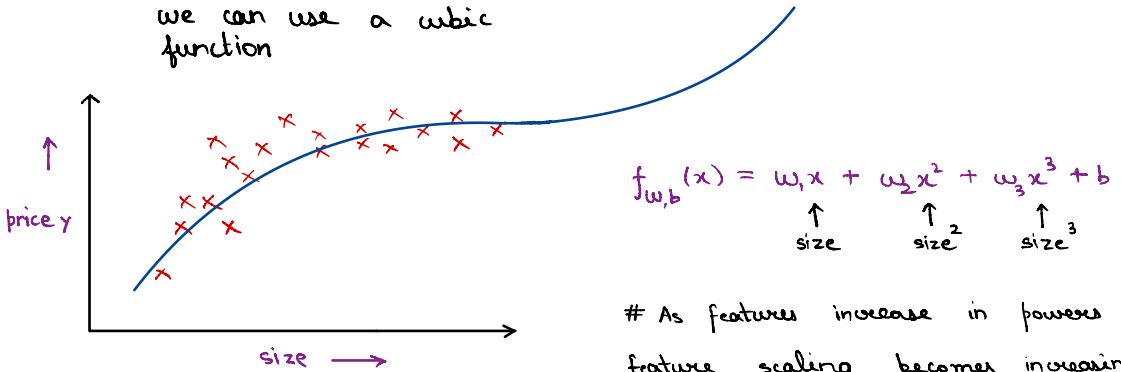
As features increase in powers feature scaling becomes increasingly important.
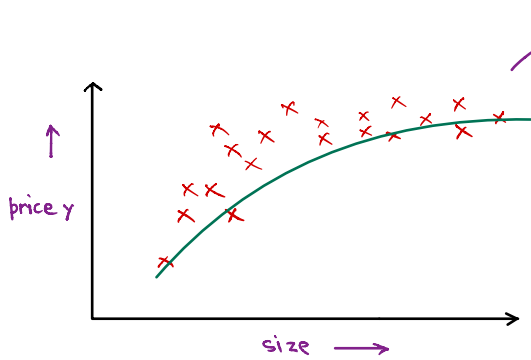
$$f_{w,b}(x) = w_1 x + w_2 \sqrt{x} + b$$

← Another choice is to take size root instead of square and cube. This is because square root function gets a bit less steep as x increases but it never completely flattens out and never goes back down.