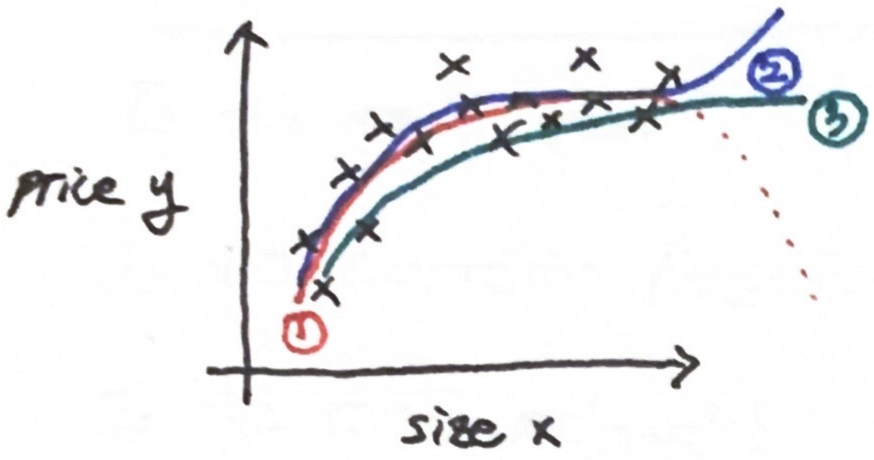
< Polynomial Regression >

- Polynomial Regression: regression which let you fit curves nonlinear functions to data

ex)



* choose model

① quadratic function

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

(x: size, x^2: size^2)

quadratic function eventually comes back down

⇓

② cubic function

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

(x: size, x^2: size^2, x^3: size^3)

③ square root function

$$f_{\vec{w},b}(\vec{x}) = w_1 x + w_2 \sqrt{x} + b$$

(x: size, $\sqrt{x}$: $\sqrt{\text{size}}$)

* importance of "feature scaling"

ex) feature x(size) range : $1 \sim 10^3$

⇓ then

x^2 range : $1 \sim 10^6$

x^3 range : $1 \sim 10^9$

→ range differs greatly

⇓

" important to apply feature scaling "

to get each features into comparable ranges of values