

$$T(n) = \underset{\uparrow}{a} n^3 + \underset{\uparrow}{b} n^2 + \underset{\uparrow}{c} n + \underset{\uparrow}{d}$$

machine dependent constt.

Study $T(n)$ in the limit $n \rightarrow \infty$

Asymptotic analysis

$$T(n) = \Theta(n^3) \rightarrow \underline{\text{Growth}}$$

$$Q \quad f(n) = n^2$$

$$C \quad g(n) = n^3$$

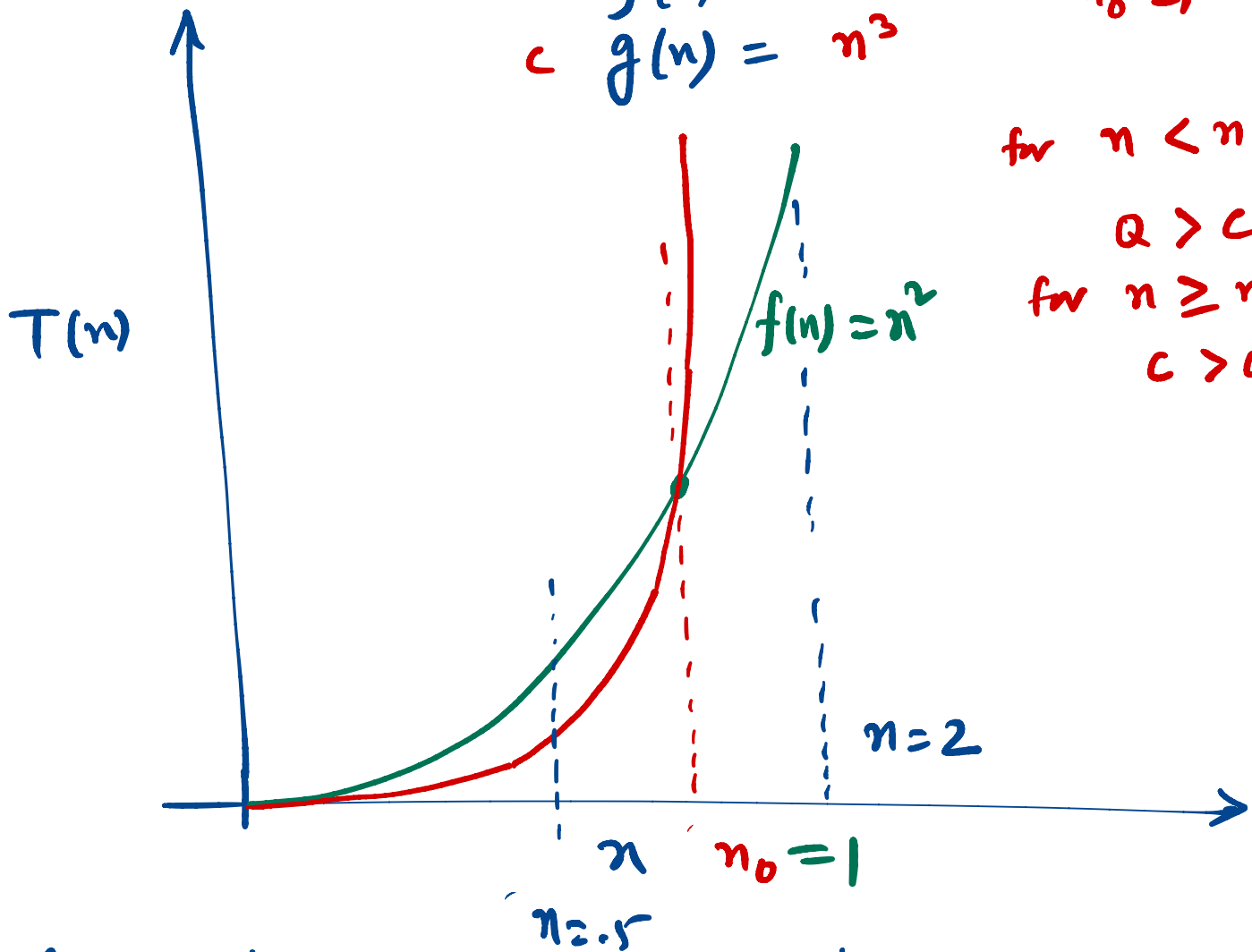
$$n_0 = 1$$

for $n < n_0$

$$Q > C$$

for $n \geq n_0$

$$C > Q$$



$$f(0.5) = \frac{1}{4}$$

$$g(0.5) = \frac{1}{8}$$

$$\Rightarrow f(0.5) > g(0.5)$$

$$f(2) = 4$$

$$g(2) = 8 \Rightarrow f(2) < g(2)$$

