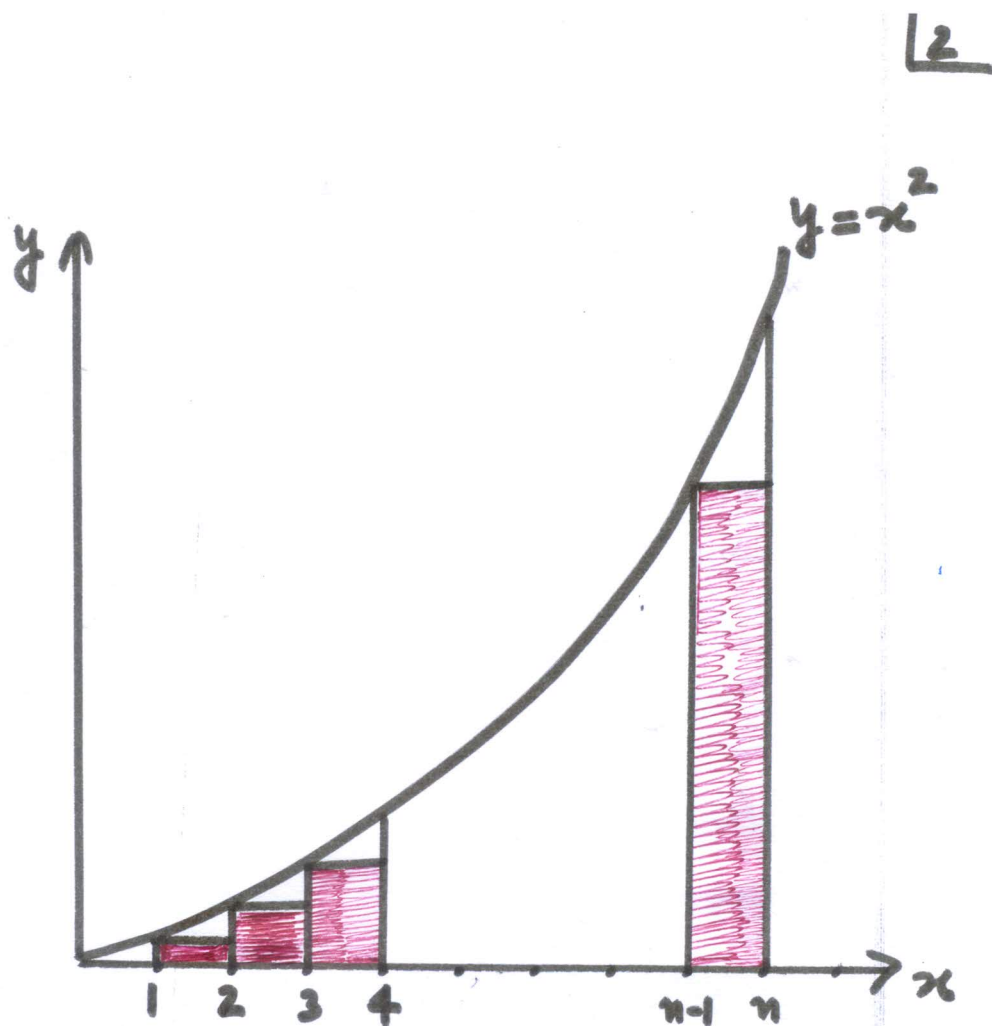


$$F(n) = \sum_{j=0}^n j^2$$

$$= 1^2 + 2^2 + 3^2 + \dots + n^2$$

$$F(n) \leq n^3$$

$$\therefore F(n) = O(n^3)$$

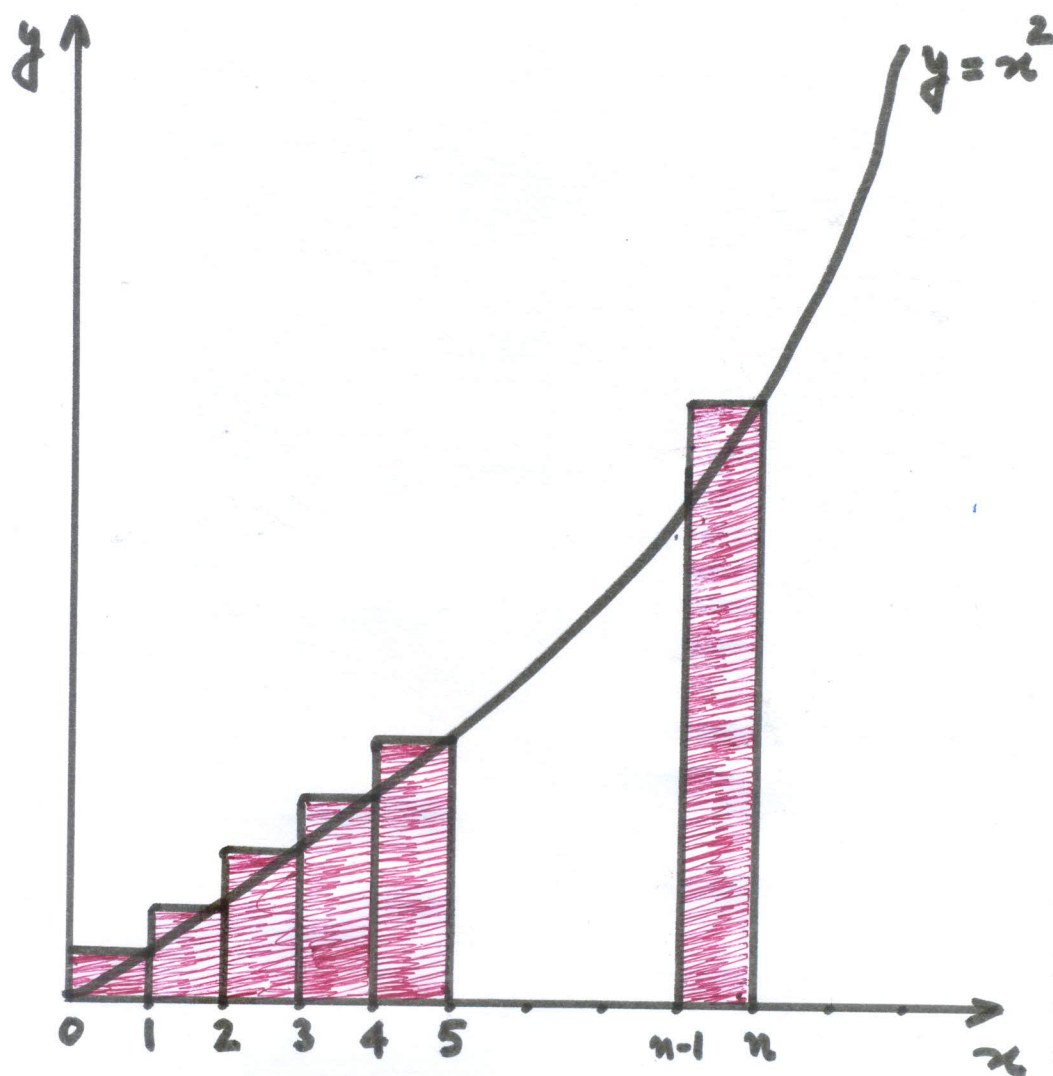


$$\sum_{j=1}^{n-1} j^2 \leq \int_1^n x^2 \cdot dx = \frac{(n^3 - 1)}{3}$$

3

$$\sum_{j=1}^n j^2 \leq \frac{(n+1)^3 - 1}{3}$$

- . We have got the upper bound.
 - . Now let's try to get the lower bound.
-



$$\sum_{j=1}^n j^2 \geq \int_0^n x^2 \cdot dx = \frac{n^3}{3}$$

This is the lower bound.
