

3.2.2 we have to show

$$(n+a)^b = \Theta(n^b) \text{ where } a, b \text{ are constant}$$

let's expand it binomially

$$(n+a)^b = b_0 n^b a^0 + b_1 n^{b-1} a^1 + \dots$$

Hence we get this polynomial equation

$$b_0 n^b a^0 + b_1 n^{b-1} a^1 + \dots$$

Now we know that for any polynomial  $g^n$   
 $f^n$ , only highest power matters

Hence its  $\Theta(n^b)$  Ans

3.2.3