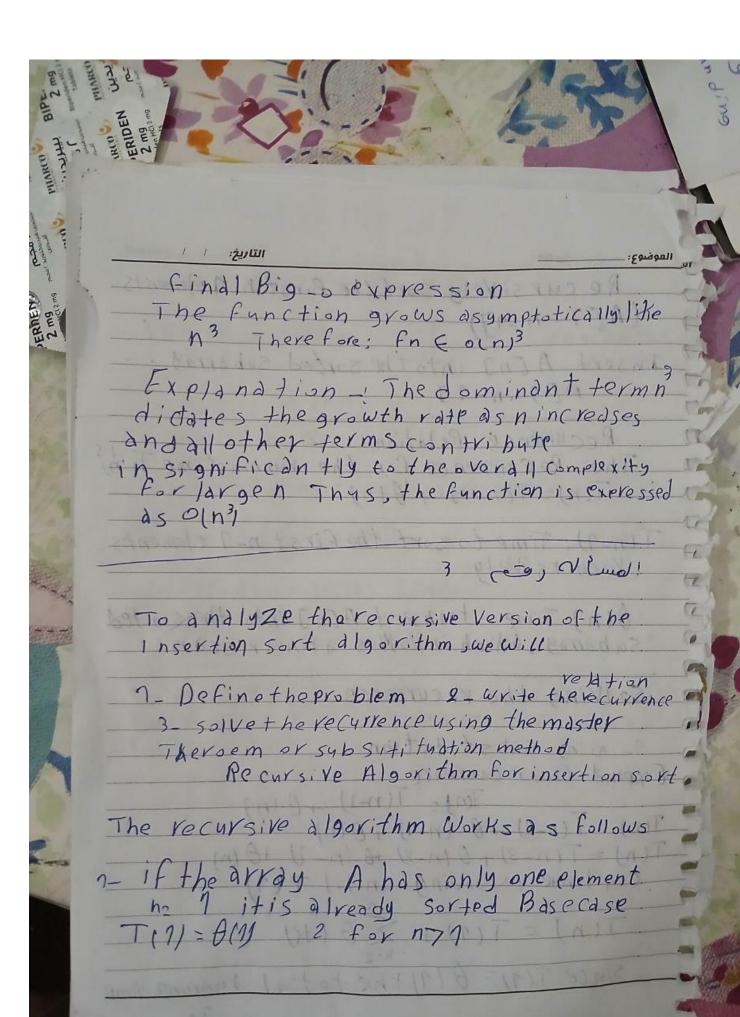
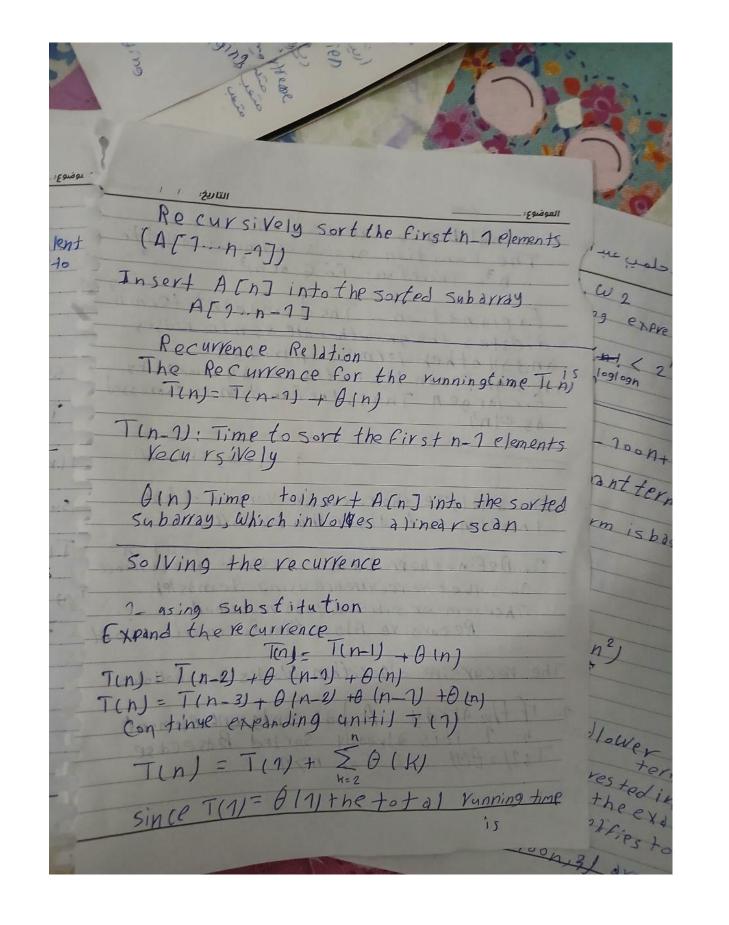
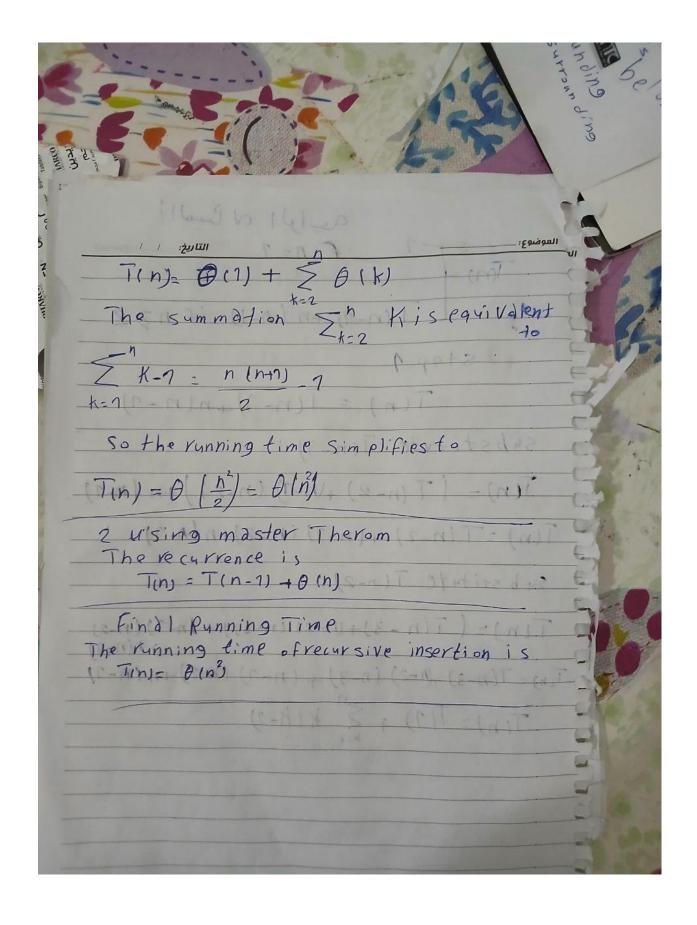
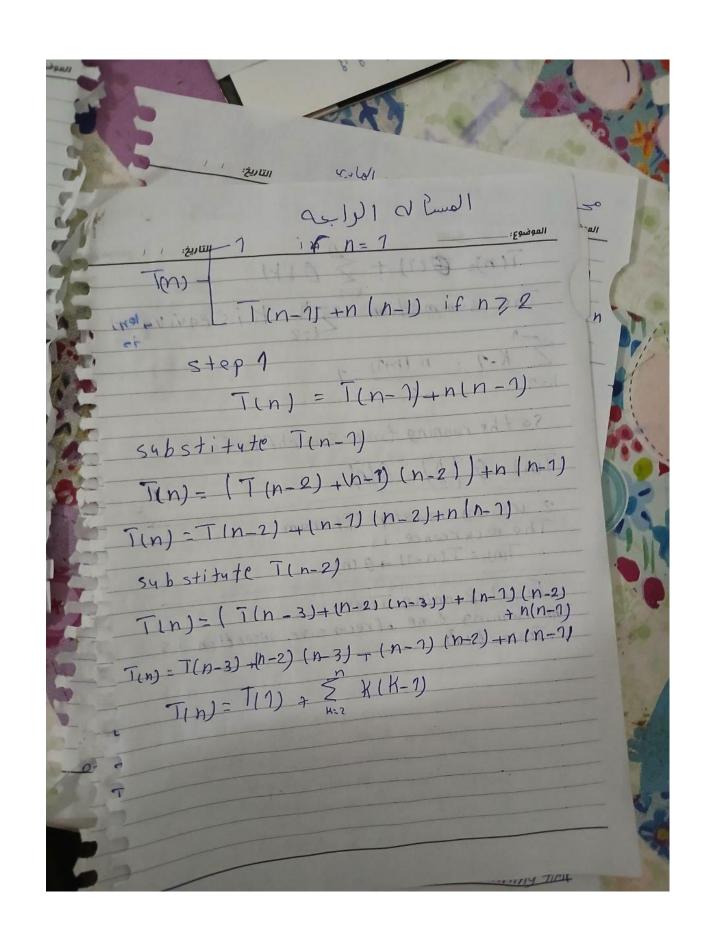
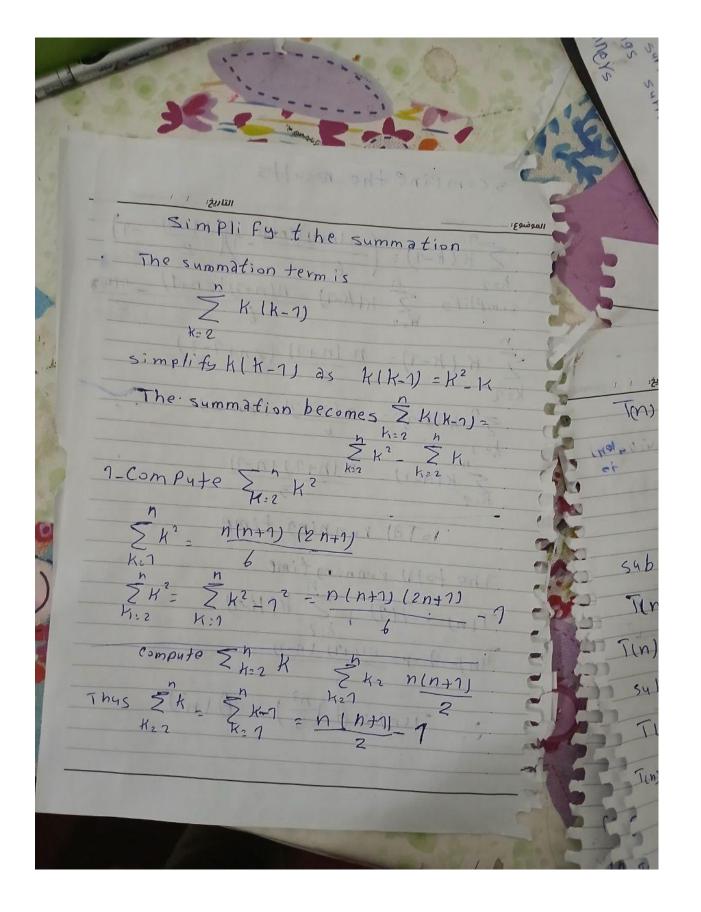
he nº محمد اشامه محمد حلمي عبد الهادي التاريخ: ١ / P/4" H. W 2 ites order the following expressions 11/6; 9 ni p. 109 n/n logn / n3 / 2/ / 2/ 2 2/ (en/n!/2n) 4 Kon (log)n! Enloglogn  $f(n) = \frac{n^3}{1000} - 100 n^2 - 100 n + 3$ 1 identify the dominant term The growth of each term is based on its neti degree ofn n 10+6 mor n3 cubic term (n3) Curs SiVE - 100 n2 quadratic term (n2) - 100 n -: linear term ing rau 3 constant term 15 2 2-ighore coefficient and lower order in Big -o notation, we are interested in the order of growth, not the exact coeffecients. So 10 n3 simplifies ton3 other terms (-100n2, -700n, 3/ areignored











3 Compine the results  $\sum_{k=2}^{n} \frac{n(n+1)(2n+1)}{6} = \frac{n(n+1)(2n+1)}{2} = \frac{n(n+1)(2n+1)(2n+1)}{2} = \frac{n(n+1)(2n+1)(2n+1)}{2} = \frac{n(n+1)(2n+1)(2n+1)}{2} = \frac{n(n+1)(2n+1)(2n+1)(2n+1)}{2} = \frac{n(n+1)(2n+1)(2n+1)(2n+1)(2n+1)}{2} = \frac{n(n+1)(2n+1)(2n+1)(2n+1)(2n+1)}{2} = \frac{n(n+1)(2n+1)(2n+1)(2n+1)(2n+1)}{2} = \frac{n(n+1)(2n+1)(2n+1)(2n+1)(2n+1)(2n+1)}{2} = \frac{n(n+1)(2n+1)($ In  $\sum_{k=2}^{n} K(K-1) = n(n+1)(2n+2-3)$  k=2  $\sum_{k=2}^{n} K(K-1) = n(n+1)(n-1)$   $\sum_{k=2}^{n} K(K-1) = n(n+1)(n-1)$   $\sum_{k=2}^{n} K(K-1) = n(n+1)(n-1)$ Total running time The total running time

Ting = Ting + E Kik-ny

Ting = Ting + E Right  $\overline{\mathcal{J}(n)} = \theta \left(\frac{n^3}{3}\right) = \theta \left(n^3\right).$ 

