DEI MINIMUM_INDEX (CL,M): DEC ITENATIVE PONTO NO THOSE (M) 2. (F Powfn=1 muran min = minimum (d[1:m], n-1)+1 WHILE icm. If d[min] < d[a]: POWER *=3 veriby win NETUM POWEN ELSE: O MUT IN $A) T(M) = \begin{cases} 1 & M = 1 \\ 2T(\frac{M}{2}) + 1 & M > 1 \end{cases}$ 17/. M=1 2. CONDITION TRUE 9.9. J(m) CALLS J(M-1) =>3. NETURN O ASSUME IT WOOKS FOR M-1 POONE: IT WORKS EM M CAN ALSO ASSUME . COND. 15 FALSE 2. MASTER THEOREM · P Works YK. 15Km 4. Min = Minimum_INDEX (at [1;m], n-1) $= 3 \left(\alpha(n) \leq \alpha(k) \quad \forall k \in \{1, ..., m-1\} \right)$ 3. RECURSION TAF S. P= Or[win] < a [0] a. TELESCOPIC SUM 3C70, 3b70 S.t. T(m) < CM-b IF P 15 FALSE XHP =) a [o] 15 THE SMILLEST VAULE T(1)=1 < c - b (=) CZ1-b UST'S ASSUM TX 45XXM T(K) 5 CX -b $T(m) = 2T\left(\frac{m}{2}\right) + 1$ $\leq 2\left(\frac{m}{2}\right) + 1 - 2b \leq Cm - b$ (055 PER LEVEL -26+CM+156m-b $9\left(\frac{m}{3}\right)^2 = 9 \cdot \frac{m^2}{9} = m^7$ (b) $T(m) = \begin{cases} 1 & m=1 \\ 9 & T(m) = \\ 9 & T(m) + m^2 \\ 0 & 0 \end{cases} + m^2 m71$ (c) $d = \begin{cases} 1 & m=1 \\ 0 & T(m) + m^2 \\ 0 & 0 \end{cases}$ (d) $d = \begin{cases} 1 & m=1 \\ 0 & T(m) + m^2 \\ 0 & 0 \end{cases}$ $\rightarrow /() (m^{2}) \qquad 278$ HUEUS K+1 $T(m) \in \mathcal{C}(m^2 lgm) \quad a=p$ $T(M) = \sum_{i=0}^{K} M^{2} = M^{2} \sum_{i=0}^{K} 1 = M^{2}(K+1)$ $(x) \quad (x=2), \quad (x=2$ $B7\lambda$ A = 2 A = 3 A = 2 $2 = ly_0 l = ly_2^2 = 1$ $T(M) \in \mathcal{O}(M)$ $= m^2 ly + m^2 \in O(m^2 ly m) \times mT$ $= T(m) = O(m^2 ly m)$ $\frac{1}{2}$