

# CompSci 161

## Spring 2021 Lecture Bonus:

### Divide and Conquer: Deterministic Selection Demo

2

#### Demo

870	647	845	742	372	882	691	341	461	596
989	151	100	729	101	397	825	587	363	283
595	524	930	259	133	955	620	970	430	280
839	139	735	590	782	913	378	474	255	739
875	150	791	779	792					

$$\begin{array}{ccccccc}
 \underline{742} & \underline{596} & \underline{151} & \underline{397} & \underline{524} & \left. \vphantom{\begin{array}{c} \underline{742} \\ \underline{620} \end{array}} \right\} \frac{n}{5} & \frac{n}{10} \\
 \underline{620} & \underline{735} & \underline{474} & \underline{779} & & & 
 \end{array}$$

$$\boxed{\cancel{596} \mid \geq \frac{3n}{10} \mid 596 \mid \geq \frac{3n}{10} \mid \cancel{596}}$$

$$T(n) = T(n/5) + T(\frac{7n}{10}) + \theta(n)$$