Q2 BWT

$S = \$11221$ $\quad BWT(T) = Z\$GGZZG$ (1 2 3 4 5 6 7)

$Z\$GGZZG$

F	L
$	Z_1
$_1G$	$\$$
$_2G$	G_1
$_3G$	G_2
$_1Z$	Z_2
$_2Z$	Z_3
$_3Z$	G_3

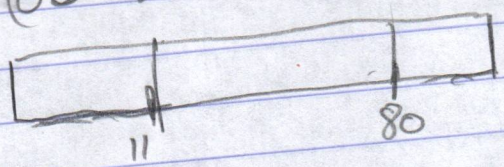
$S_A = 2, 7, 4, 3, 6, 5, 1$

$\$ G_1 Z_1 \$$ Not Reversed BWT

$T = G_1 Z_1 F$

Q3 Rand analysis goal $(80-11)\%$

$\varepsilon v = (80-11)\% = 2$



LHS = 11 RHS = 0

$$\sum_{i=0}^{\log_{80/9} n} an$$

$$n + \left(\frac{11n}{100}\right) + \left(\frac{89n}{100}\right) \qquad O(n \log_{11/9} n + 1)$$

is worst case analysis as $n \to \infty$. Should not choose bad pivot more than twice

P/NP

Largest 3 Elements Problem

unsorted n^2

if true prove $\exists \varepsilon$ is in P

if true prove $\nexists \varepsilon$ is in NP

algorithm exists that verifies:

VerifySort(list int, potential sort)

Potential = (quick sort)

$O(n \log n + n) = O(n \log n) = n^2$ $O(n^2) = NP$

all Problems in P are in NP

Dijkstras = $O(|E| \log |V|)$

yes easy to verify in polynomial time

length of shortest path = unique answer