[Keypad Combination]

$0 \longrightarrow abc$

$1 \longrightarrow def$

$2 \longrightarrow ghi$

$3 \longrightarrow jkl$

$4 \longrightarrow mnop$

$5 \longrightarrow qrst$

$6 \longrightarrow uv$

$7 \longrightarrow wxyz$

$8 \longrightarrow .;$
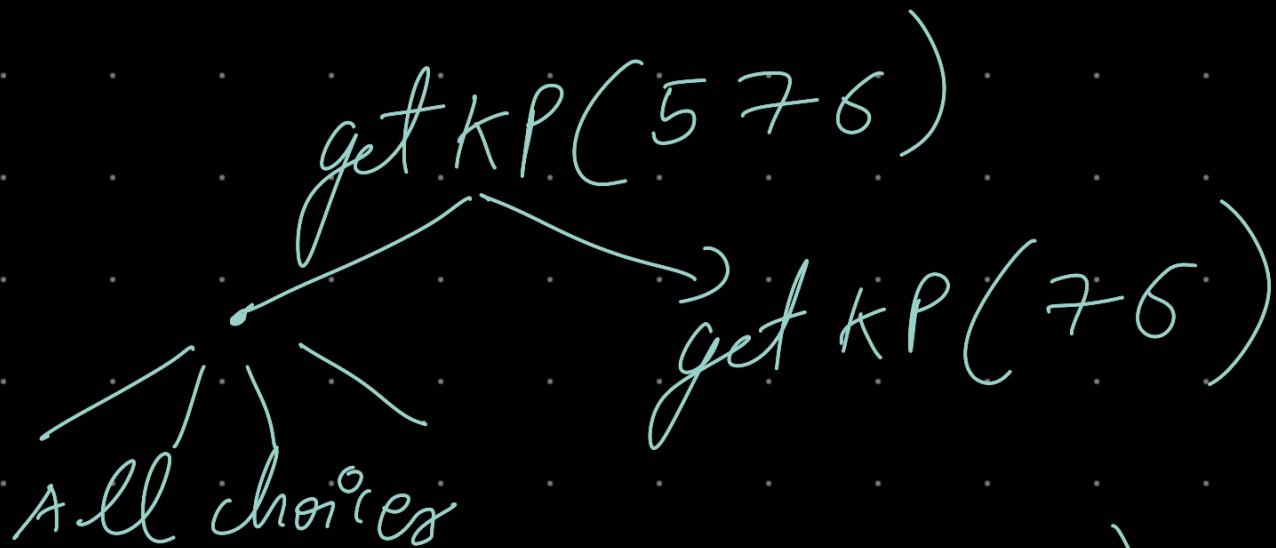
$9 \longrightarrow ?!$

Input $\rightarrow$ 576

$\Downarrow$

Give all string combination possible with this number

5   7   6

4 choice   4 choice   2 choice

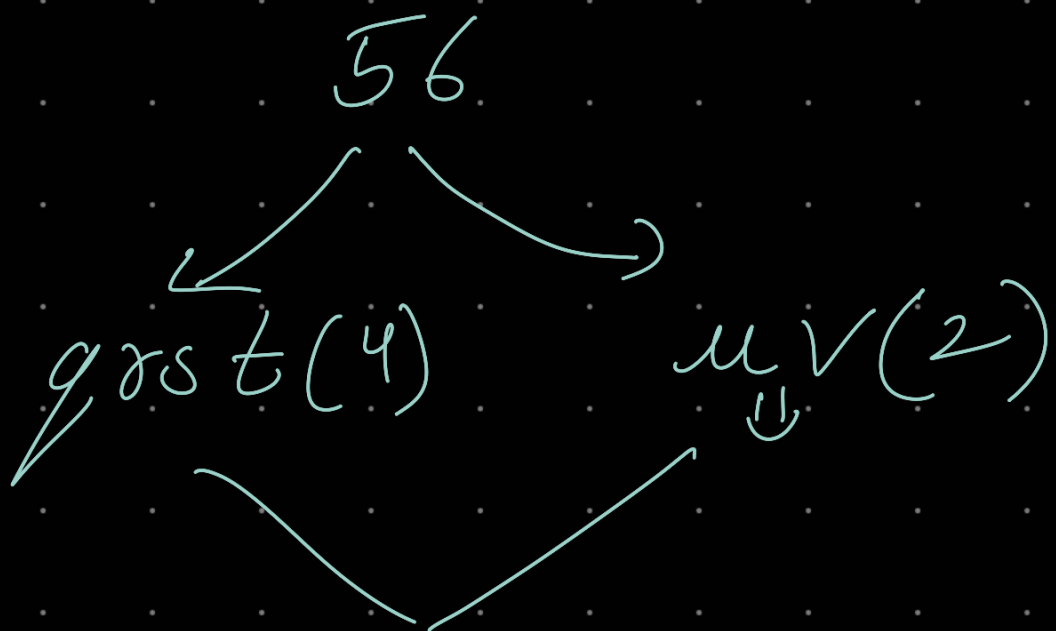Total = 4 . 4 . 2

= 32 possibility

Recursive equation

get KP (5 7 6)

get KP (7 6)

All choices

q + get KP (7 6)

r + get KP (7 6)

s + get KP (7 6)

t + get KP (7 6)

get KP (str) → all choice + get KP (subString)

E.g →

56

$qrst(4)$ $\underset{\shortparallel}{\mu}v(2)$

$$
\begin{array}{ll}
q & \mu \\
q & v \\
r & \mu \\
r & v \\
s & \mu \\
s & v \\
t & \mu \\
t & v
\end{array}
$$

$4 \times 2 = 8$