

5			25	
		11	3	E

Cannot go if some i column
blocked

i blocked if $(1, i)$ filled

and one of $(2, i-1), (2, i), (2, i+1)$

$$i: (a_x \cdot x_{i-1} + b_x, a_y \cdot y_{i-1} + b_y)$$

$$O: (x_0, y_0)$$

$$(x_s, y_s) \rightarrow \begin{matrix} \leftarrow 1 \\ \downarrow \\ \text{move } b_y \text{ } 1 \\ \text{in } 1 \text{ second} \end{matrix}$$

collect in O seconds

$$(x_0, y_0, a_x, a_y, b_x, b_y)$$

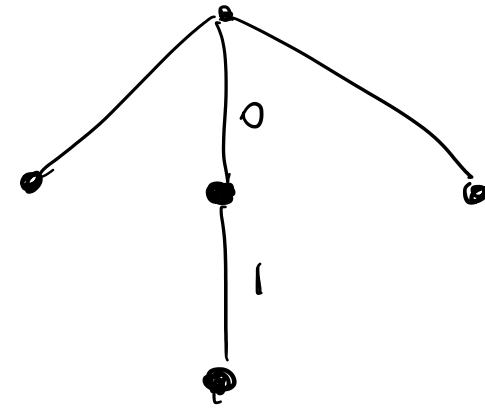
$$1 \quad 1 \quad 2 \quad 3 \quad 1 \quad 0$$

$$(1, 1) \xrightarrow{4} (3, 3) \xrightarrow{10} (7, 3) \xrightarrow{1} (15, 27), \dots$$

$\xrightarrow{4}$ (red arrow from (1,1) to (2,4))
 $\xrightarrow{2}$ (green arrow from (3,3) to (2,4))
 $\xrightarrow{10}$ (red arrow from (3,3) to (7,3))

$$(x_0, y_0) \rightarrow (a_x \cdot x_0 + b_x, a_y \cdot y_0 + b_y)$$

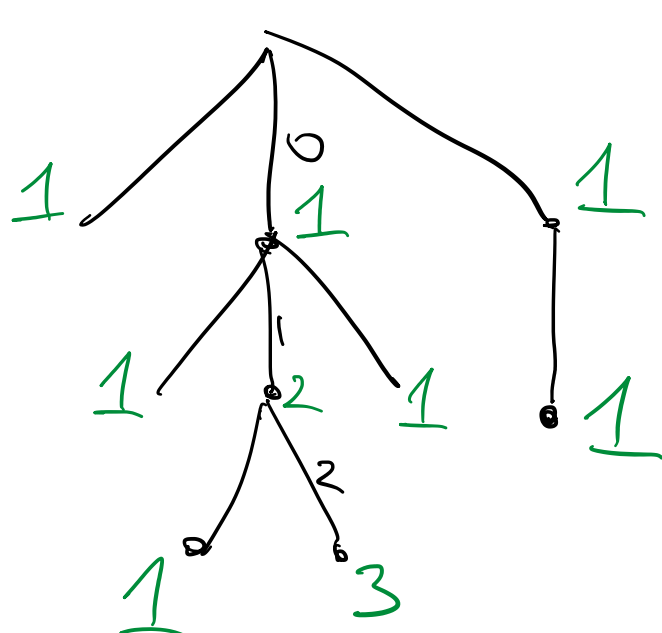
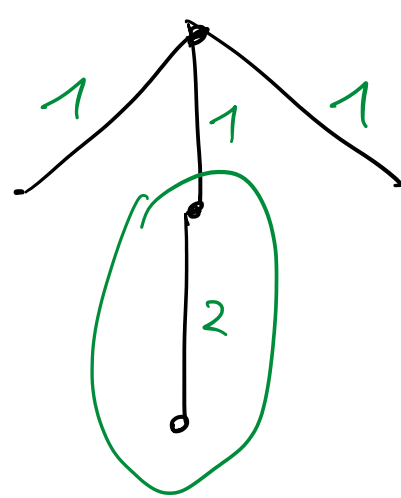
$$\text{cost: } (a_x - 1)x_0 + b_x + (a_y - 1)y_0 + b_y$$



pick the longest path

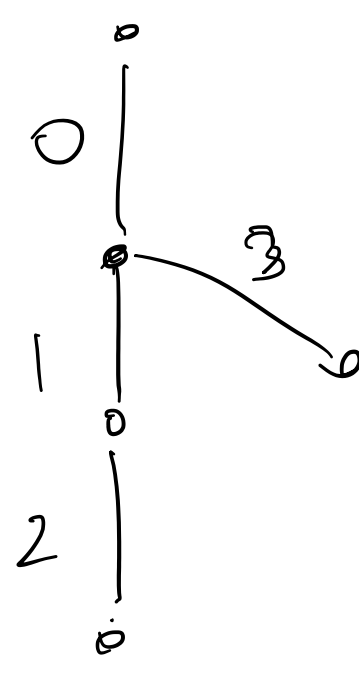
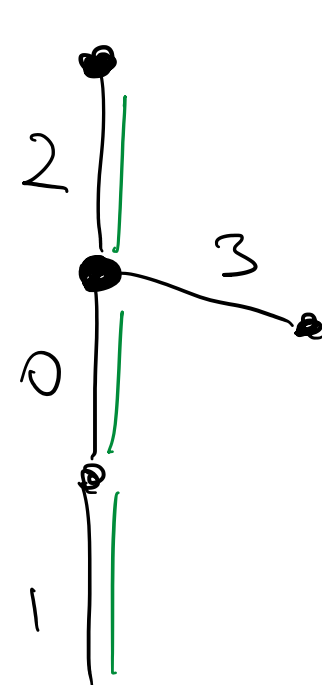
score: 1 for each vertex not on that path

recursively for the path



$$1 + 2 + 3 + \dots + d$$

$$\frac{d+1}{2}$$



$$3 + 2 + 2 + 3 + \dots$$

$$3 + 2 + 2 + \dots$$

We want O on the
"center" edge

Find centroid?

$$2 \rightarrow 1 \rightarrow 0$$

$$\frac{1}{2} \quad \frac{1}{1} \quad 1.5$$

$$3 \rightarrow 2 \rightarrow 1 \rightarrow 0$$

$$\frac{1}{3} \quad \frac{1}{2} \quad \frac{1}{1} \quad 1\frac{5}{6}$$

$$3 \rightarrow 1 \rightarrow 0$$

$$\frac{2}{3} \quad \frac{1}{1}$$