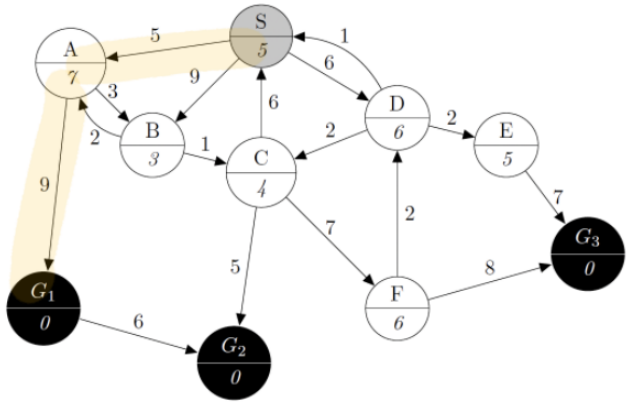
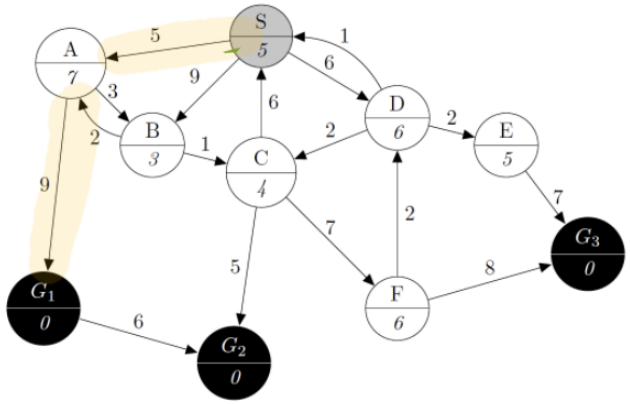
1. BÚSQUEDA EN ANCHURA



ABIERTOS	CERRADOS
~~(S, Ø)~~	(S, Ø)
~~(A, S)~~	(A, S)
(B, S)	
(D, S)	
(G_1, A)	

- Orden entran cerrados:
  S, A
- Objetivo alcanzado: G_1
- Solución: $S \longrightarrow A \longrightarrow G_1$

2. DESCENSO ITERATIVO

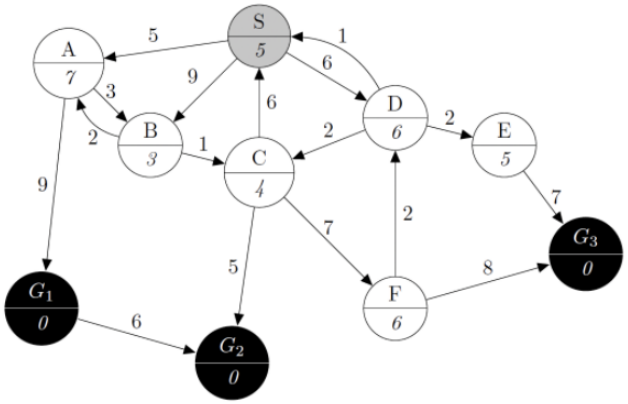


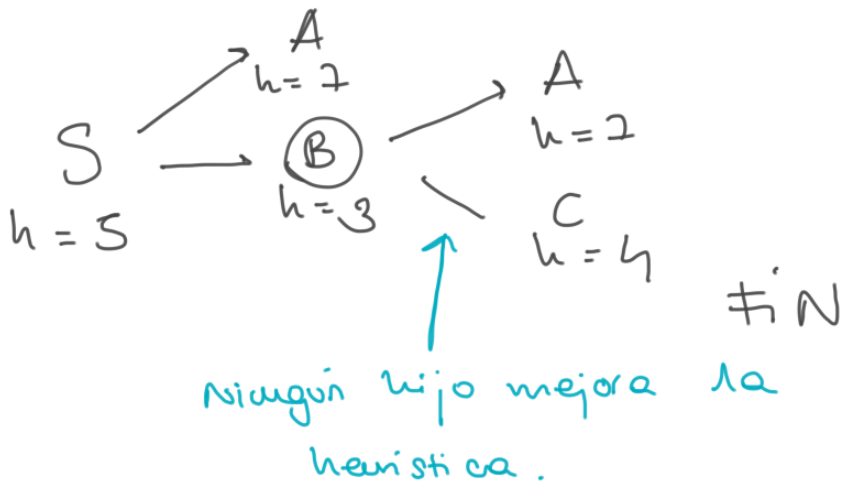
NIVEL 1: S → ~~A~~, ~~B~~, ~~D~~

NIVEL 2: S → A → ~~B~~ → G_1

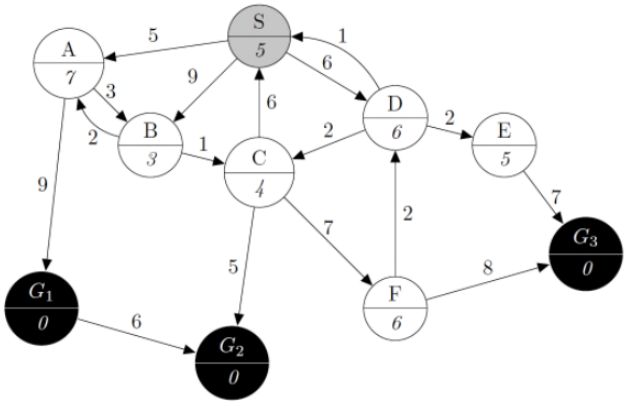
- G_1

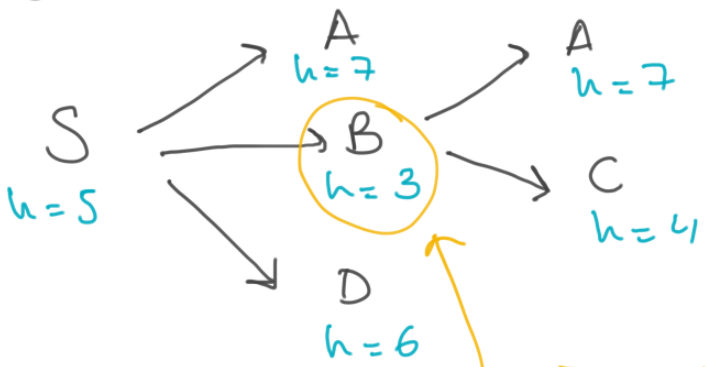
3. ESCALADA SIMPLE





4. ESCALADA MÁXIMA PENDIENTE





FIN

Expando todos los hijos y elijo el más prometedor.

(INCISO)

EJERCICIO 22 : ENFRIAMIENTO SIMULADO.

a) $S \longrightarrow A$

$h = 5$ $\quad$ $h = 7$

$$P(S \longrightarrow A) = e^{-\Delta e / t} = e^{-2/10} \simeq 0.82$$

b) $A \longrightarrow B$

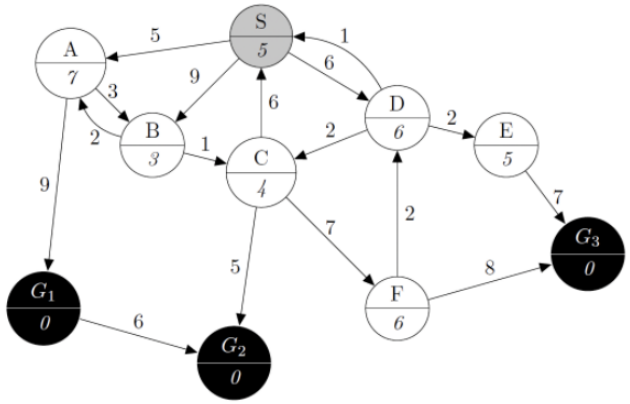
$h = 7$ $\quad$ $h = 3$

$$P(A \longrightarrow B) = 1$$

↑

Se mejora en heurística

5. A*

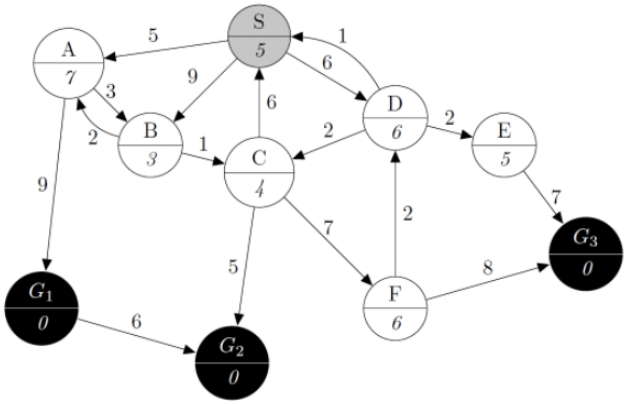


¿Admisible? $h(x) \leq h^*(x)$

¿Monótona?

$h(x) - h(y) \leq c(x, y)$

5. A*



¿Admisible? $h(x) \leq h^*(x)$

¿Monótona?

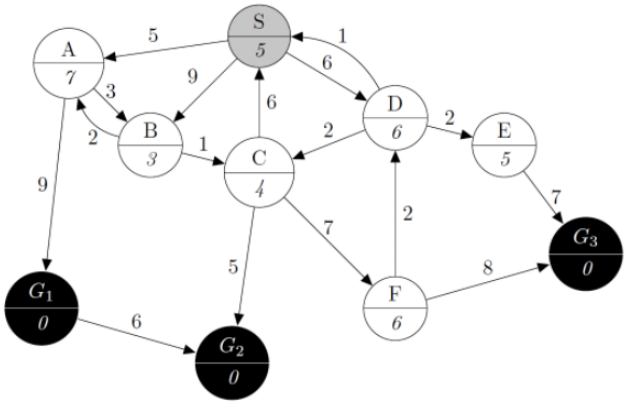
$h(x) - h(y) \leq c(x,y)$

NO A y B

$h(A) - h(B) \leq c(A,B)$

$7 - 3 = 4 \not\leq 3$

5. A*



¿Admisible? $h(x) \leq h^*(x)$

¿Monótona?

$h(x) - h(y) \leq c(x,y)$

NO A y B

$h(A) - h(B) \leq c(A,B)$

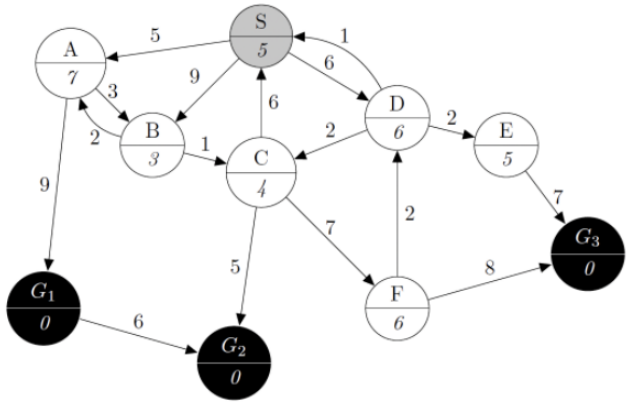
$7 - 3 = 4 \not\leq 3$

ABIERTOS

$(S, \emptyset, 0, 5)$

CERRADOS

5. A*



ABIERTOS

~~(S, Ø, 0, 5)~~

(A, S, 5, 7)

(B, S, 9, 3)

(D, S, 6, 6)

CERRADOS

(S, Ø, 0, 5)

¿Admisible? $h(x) \leq h^*(x)$

¿Monótona?

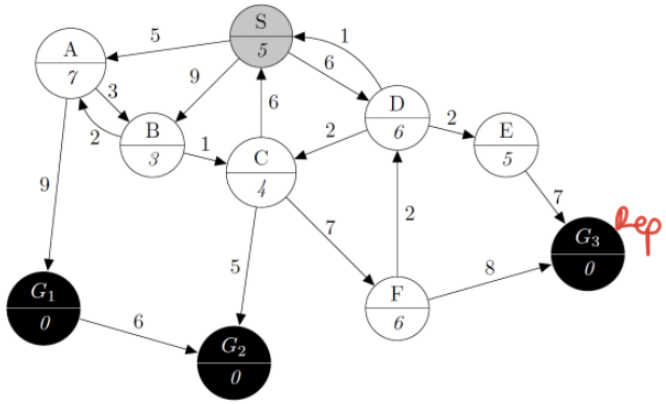
$h(x) - h(y) \leq c(x,y)$

NO A y B

$h(A) - h(B) \leq c(A,B)$

$7 - 3 = 4 \not\leq 3$

5. A*



ABIERTOS

~~(S, ∅, 0, 5)~~

~~(A, S, 5, 7)~~

(B, S, 9, 3)

(D, S, 6, 6)

(B, A, 8, 3)

(G_1, A, 14, 0)

pop

CERRADOS

(S, ∅, 0, 5)

(A, S, 5, 7)

¿Admisible? $h(x) \leq h^*(x)$

¿Monótona?

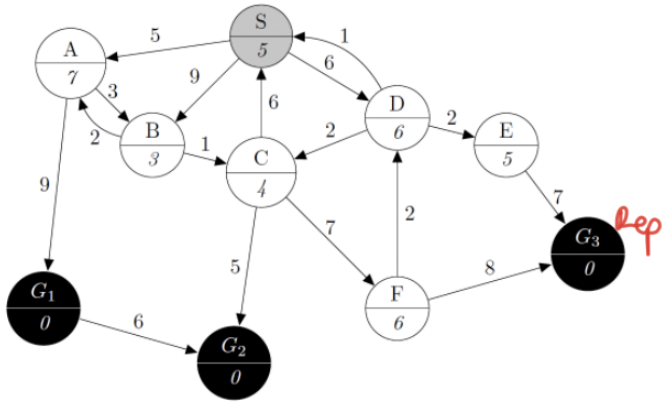
$h(x) - h(y) \leq c(x,y)$

NO A y B

$h(A) - h(B) \leq c(A,B)$

$7 - 3 = 4 \not\leq 3$

5. A*



ABIERTOS

~~(S, ∅, 0, 5)~~

~~(A, S, 5, 7)~~

~~(B, S, 9, 3)~~

(D, S, 6, 6)

~~(B, A, 8, 3)~~

(G_1, A, 14, 0)

(C, B, 9, 4)

Rep

CERRADOS

(S, ∅, 0, 5)

(A, S, 5, 7) (A, B, 10, 7)

(B, A, 8, 3)

¿Admisible? $h(x) \leq h^*(x)$

¿Monótona?

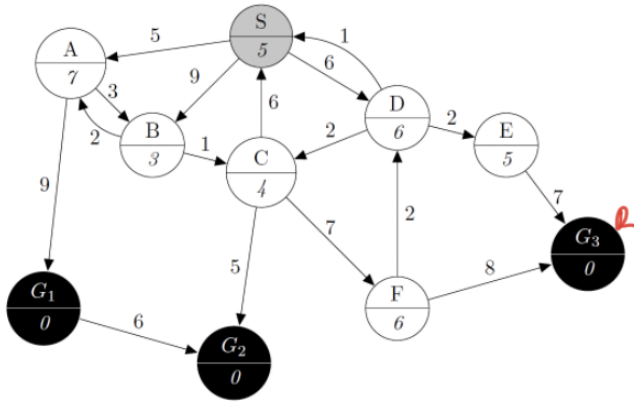
$h(x) - h(y) \leq c(x, y)$

NO A y B

$h(A) - h(B) \leq c(A, B)$

$7 - 3 = 4 \leq 3$

5. A*



ABIERTOS

~~(S, ∅, 0, 5)~~

~~(A, S, 5, 7)~~

~~(B, S, 9, 3)~~ Rep

~~(D, S, 6, 6)~~

~~(B, A, 8, 3)~~ Rep

$(G_1, A, 14, 0)$

(C, B, 9, 4)

(C, D, 8, 4)

(E, D, 8, 5)

CERRADOS Ni falta

(S, ∅, 0, 5) ~~(S, D, 7, 5)~~

(A, S, 5, 7) ~~(A, B, 10, 7)~~

(B, A, 8, 3)

(D, S, 6, 6)

¿Admisible? $h(x) \leq h^*(x)$

¿Monótona?

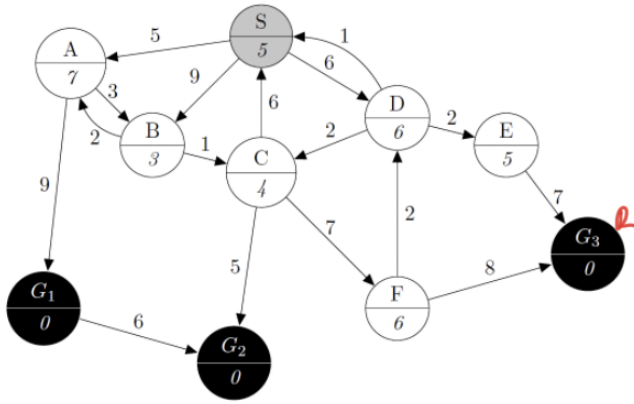
$h(x) - h(y) \leq c(x, y)$

NO A y B

$h(A) - h(B) \leq c(A, B)$

$7 - 3 = 4 \leq 3$

5. A*



ABIERTOS

(S, ~~∅~~, 0, 5)

(A, S, 5, 7)

→ ~~(B, S, 9, 3)~~

~~(D, S, 6, 6)~~

Rep ↳ ~~(B, A, 8, 3)~~

(G1, A, 14, 0)

→ ~~(C, B, 9, 4)~~

Rep ↳ (C, D, 8, 4)

(E, D, 8, 5)

CERRADOS Ni falta

(S, ∅, 0, 5) ~~(S, D, 7, 5)~~

(A, S, 5, 7) ~~(A, B, 10, 7)~~

(B, A, 8, 3)

(D, S, 6, 6)

¿Admisible? $h(x) \leq h^*(x)$

¿Monótona?

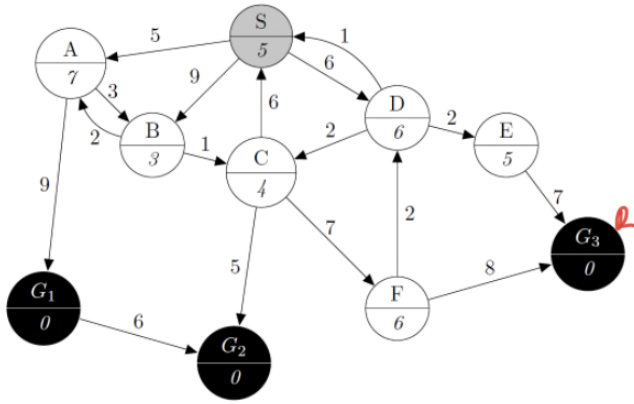
$h(x) - h(y) \leq c(x,y)$

NO A y B

$h(A) - h(B) \leq c(A,B)$

$7 - 3 = 4 \leq 3$

5. A*



¿Admisible? $h(x) \leq h^*(x)$

¿Monótona?

$h(x) - h(y) \leq c(x,y)$

NO A y B

$h(A) - h(B) \leq c(A,B)$

$7 - 3 = 4 \not\leq 3$

ABIERTOS

~~(S, Ø, 0, 5)~~

~~(A, S, 5, 7)~~

Rep → ~~(B, S, 9, 3)~~

~~(D, S, 6, 6)~~

Rep → ~~(B, A, 8, 3)~~

$(G_1, A, 14, 0)$

Rep → ~~(C, B, 9, 4)~~

Rep → ~~(C, D, 8, 4)~~

(E, D, 8, 5)

$(G_2, C, 13, 0)$

(F, C, 15, 6)

CERRADOS Ni falta

(S, Ø, 0, 5) ~~(S, D, 7, 5)~~

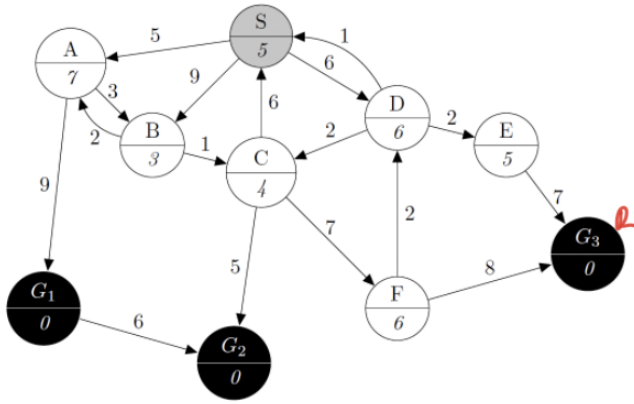
(A, S, 5, 7) ~~(A, B, 10, 7)~~

(B, A, 8, 3)

(D, S, 6, 6)

(C, D, 8, 4)

5. A*



ABIERTOS

~~(S, ∅, 0, 5)~~

(A, S, 5, 7)

~~(B, S, 9, 3)~~

~~(D, S, 6, 6)~~

~~(B, A, 8, 3)~~

(G_1, A, 14, 0)

~~(C, B, 9, 4)~~

~~(C, D, 8, 4)~~

~~(E, D, 8, 5)~~

(G_2, C, 13, 0)

(F, C, 15, 6)

(G_3, E, 15, 0)

Rep

Rep

CERRADOS Ni falta

(S, ∅, 0, 5) ~~(S, D, 7, 5)~~

(A, S, 5, 7) ~~(A, B, 10, 7)~~

(B, A, 8, 3)

(D, S, 6, 6)

(C, D, 8, 4)

(E, D, 8, 5)

¿Admisible? $h(x) \leq h^*(x)$

¿Monótona?

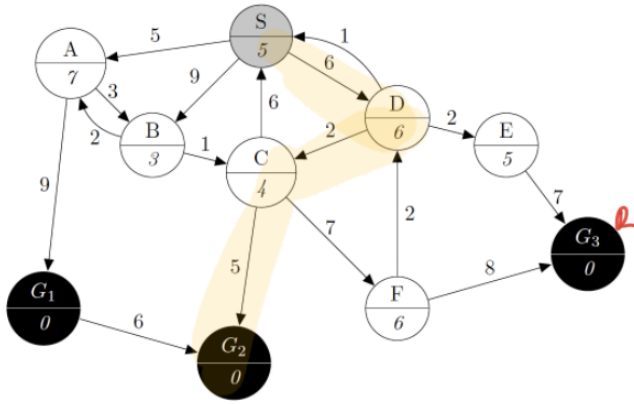
$h(x) - h(y) \leq c(x, y)$

NO A y B

$h(A) - h(B) \leq c(A, B)$

$7 - 3 = 4 \leq 3$

5. A*



ABIERTOS

~~(S, ∅, 0, 5)~~

~~(A, S, 5, 7)~~

~~(B, S, 9, 3)~~ Rep

~~(D, S, 6, 6)~~

~~(B, A, 8, 3)~~ Rep

$(G_1, A, 14, 0)$

~~(C, B, 9, 4)~~

~~(C, D, 8, 4)~~

~~(E, D, 8, 5)~~

~~$(G_2, C, 13, 0)$~~

$(F, C, 15, 6)$

$(G_3, E, 15, 0)$

CERRADOS Ni falta

$(S, \emptyset, 0, 5)$ ~~(S, D, 7, 5)~~

$(A, S, 5, 7)$ ~~(A, B, 10, 7)~~

$(B, A, 8, 3)$

$(D, S, 6, 6)$

$(C, D, 8, 4)$

$(E, D, 8, 5)$

$(G_2, C, 13, 0)$

FIN

¿Admisible? $h(x) \leq h^*(x)$

¿Monótona?

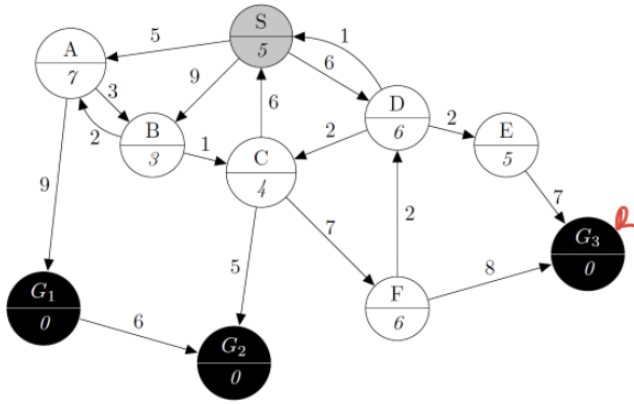
$h(x) - h(y) \leq c(x, y)$

NO A y B

$h(A) - h(B) \leq c(A, B)$

$7 - 3 = 4 \leq 3$

5. A*



ABIERTOS

~~(S, ∅, 0, 5)~~

~~(A, S, 5, 7)~~

~~(B, S, 9, 3)~~ → Rep

~~(D, S, 6, 6)~~

~~(B, A, 8, 3)~~ → Rep

$(G_1, A, 14, 0)$

~~(C, B, 9, 4)~~ → Rep

~~(C, D, 8, 4)~~

~~(E, D, 8, 5)~~

~~$(G_2, C, 13, 0)$~~

(F, C, 15, 6)

$(G_3, E, 10, 0)$

CERRADOS Ni falta

(S, ∅, 0, 5) ~~(S, D, 7, 5)~~

(A, S, 5, 7) ~~(A, B, 10, 7)~~

(B, A, 8, 3)

(D, S, 6, 6)

(C, D, 8, 4)

(E, D, 8, 5)

$(G_2, C, 13, 0)$

FIN

¿Admisible? $h(x) \leq h^*(x)$

¿Monótona?

$h(x) - h(y) \leq c(x, y)$

NO A y B

$h(A) - h(B) \leq c(A, B)$

$7 - 3 = 4 \not\leq 3$