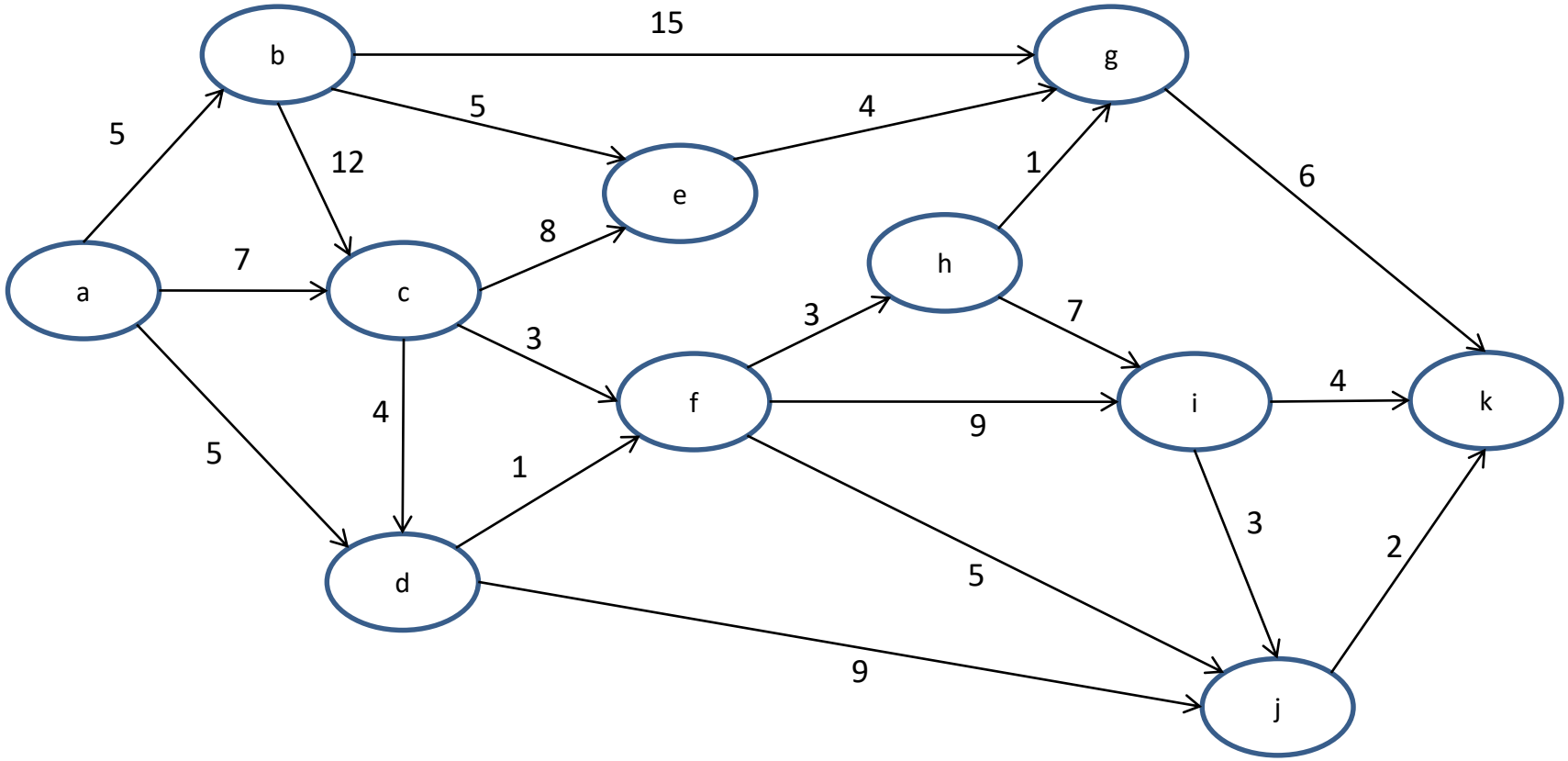
ANALIZA KRITIČNE POTI

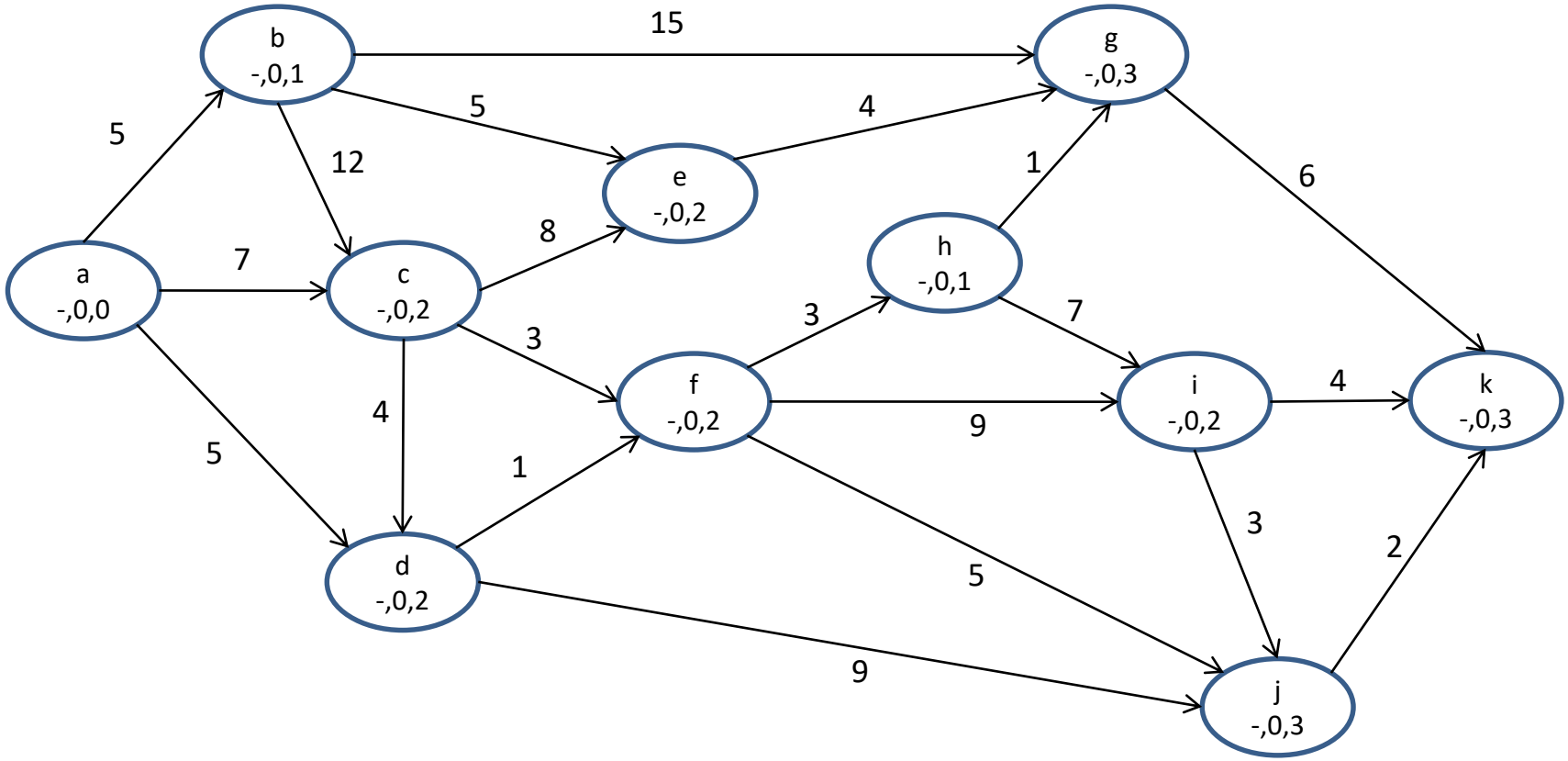
Podan je graf na sliki. Izračunajte kritično pot v grafu.



ANALIZA KRITIČNE POTI

Inicializacija

v vozliščih shranimo predhodno vozlišče, maksimalen čas do vozlišča, število še nepregledanih vhodov

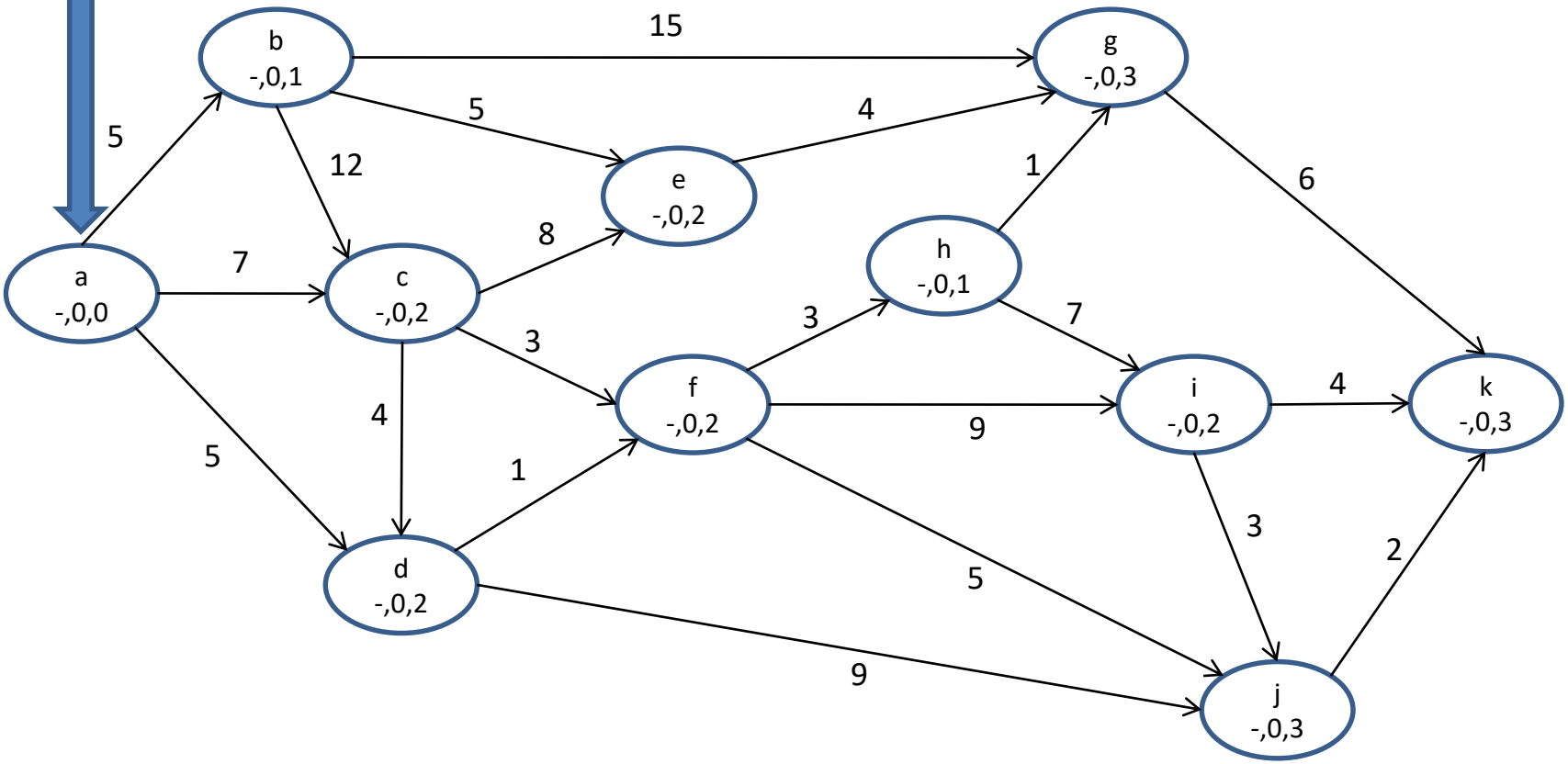


ANALIZA KRITIČNE POTI

Seznam vozlišč, katerih naslednikov še nismo pregledali:

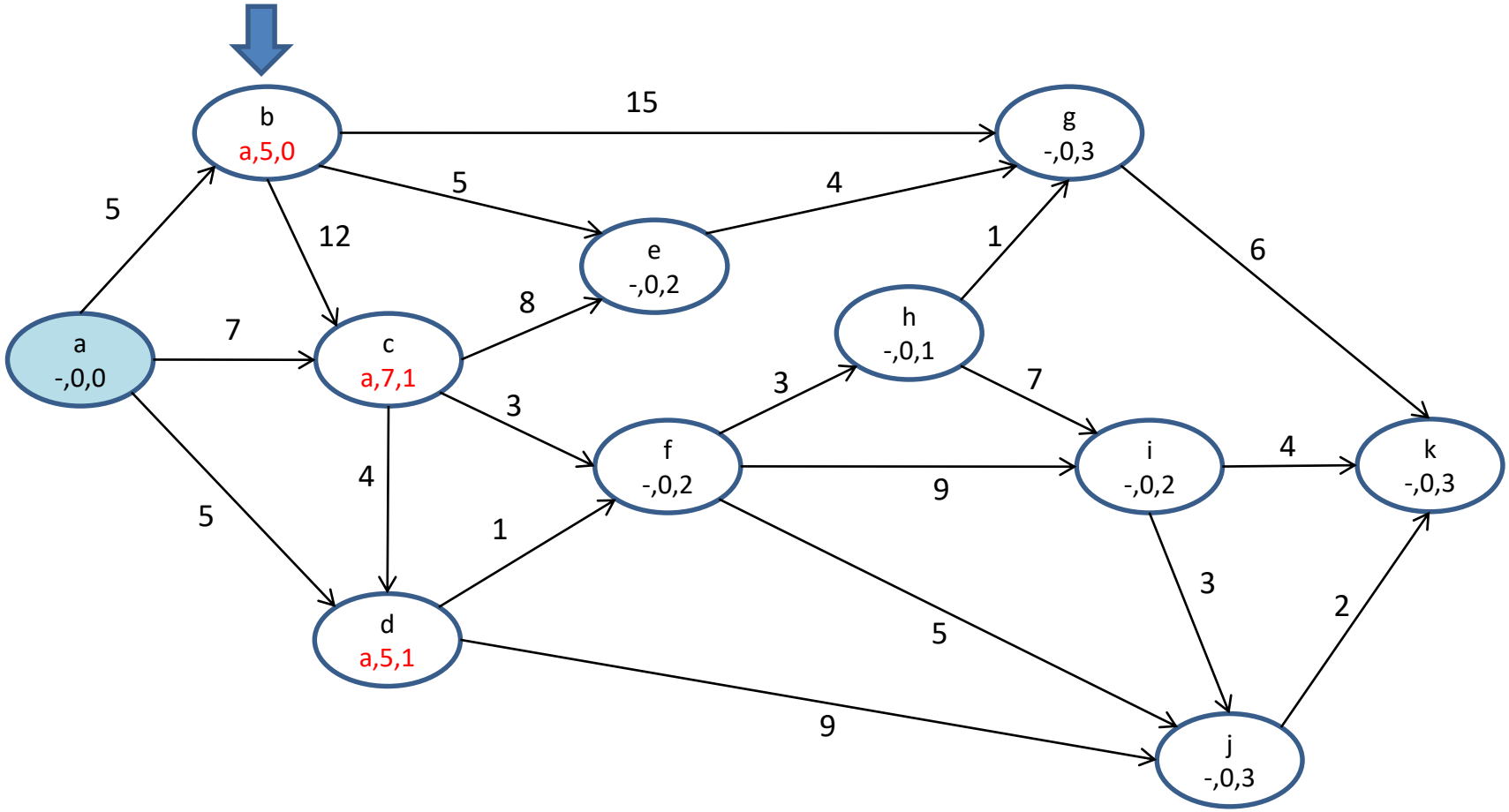
a

v seznam dodajamo samo vozlišča, katerim smo pregledali vse vhode



ANALIZA KRITIČNE POTI

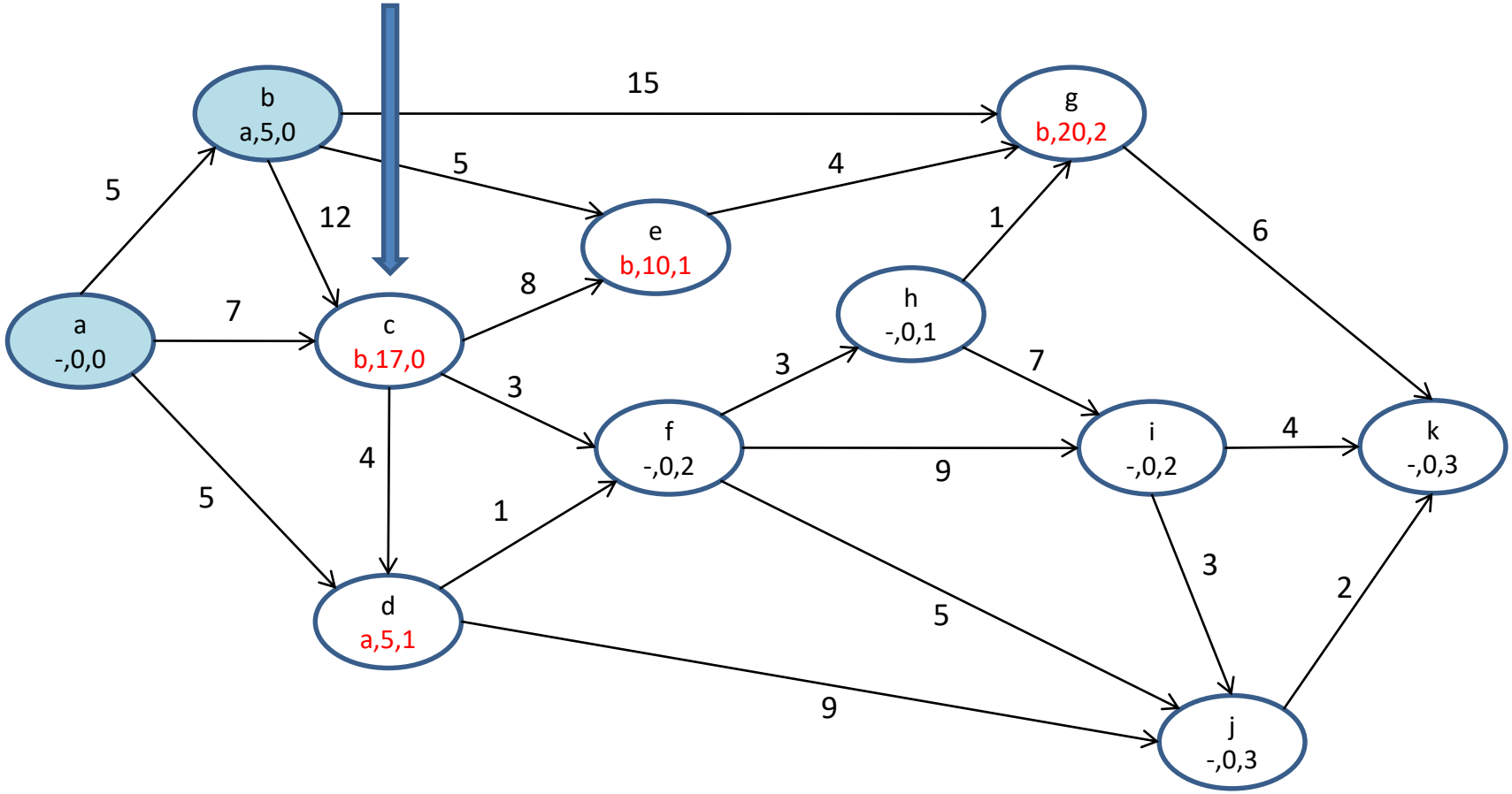
Seznam vozlišč, katerih naslednikov še nismo pregledali:



ANALIZA KRITIČNE POTI

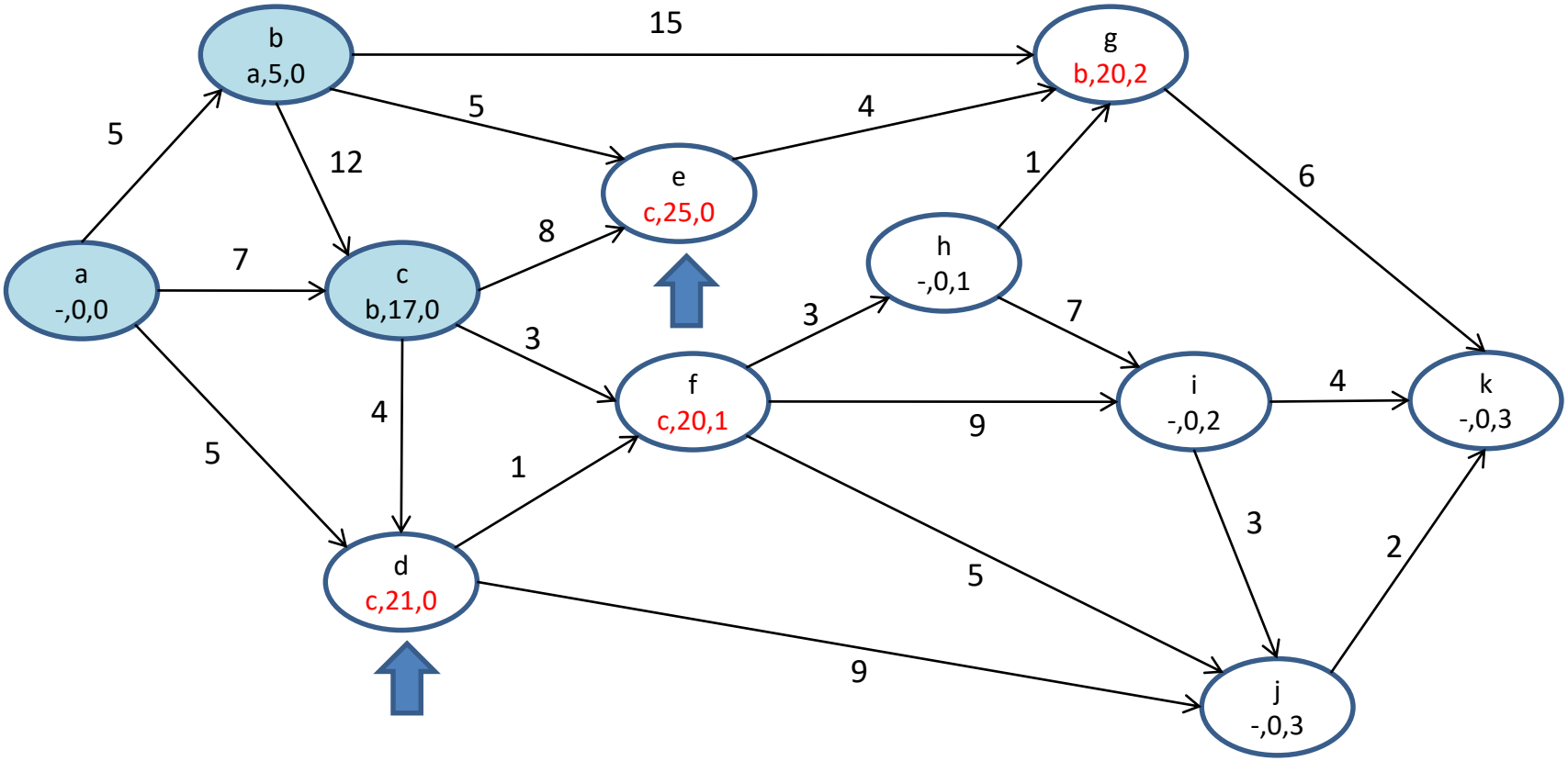
Seznam vozlišč, katerih naslednikov še nismo pregledali:

našli smo daljšo pot: razdalja vozlišča ‘b’ + povezava od ‘b’ do ‘c’



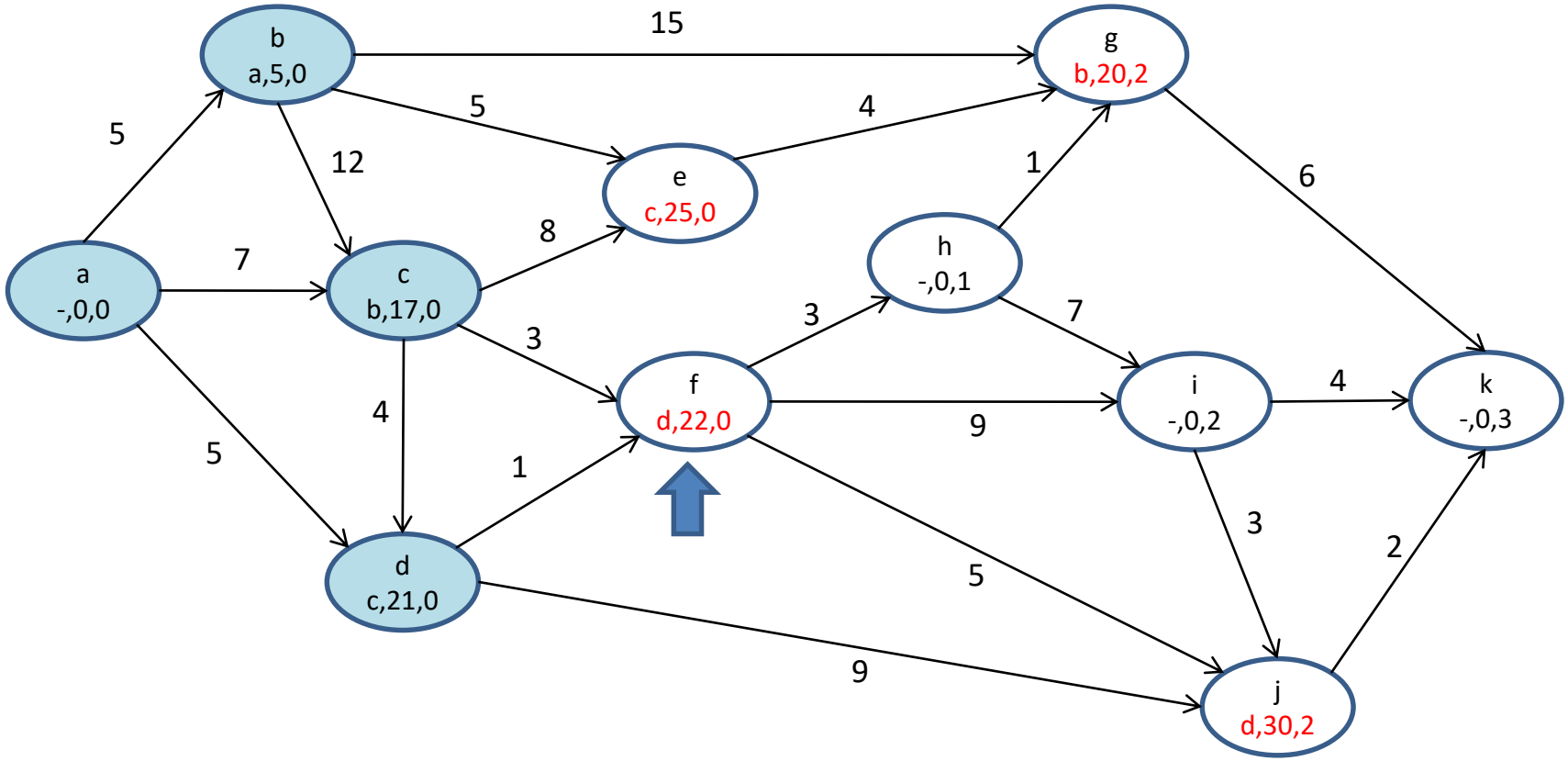
ANALIZA KRITIČNE POTI

Seznam vozlišč, katerih naslednikov še nismo pregledali:



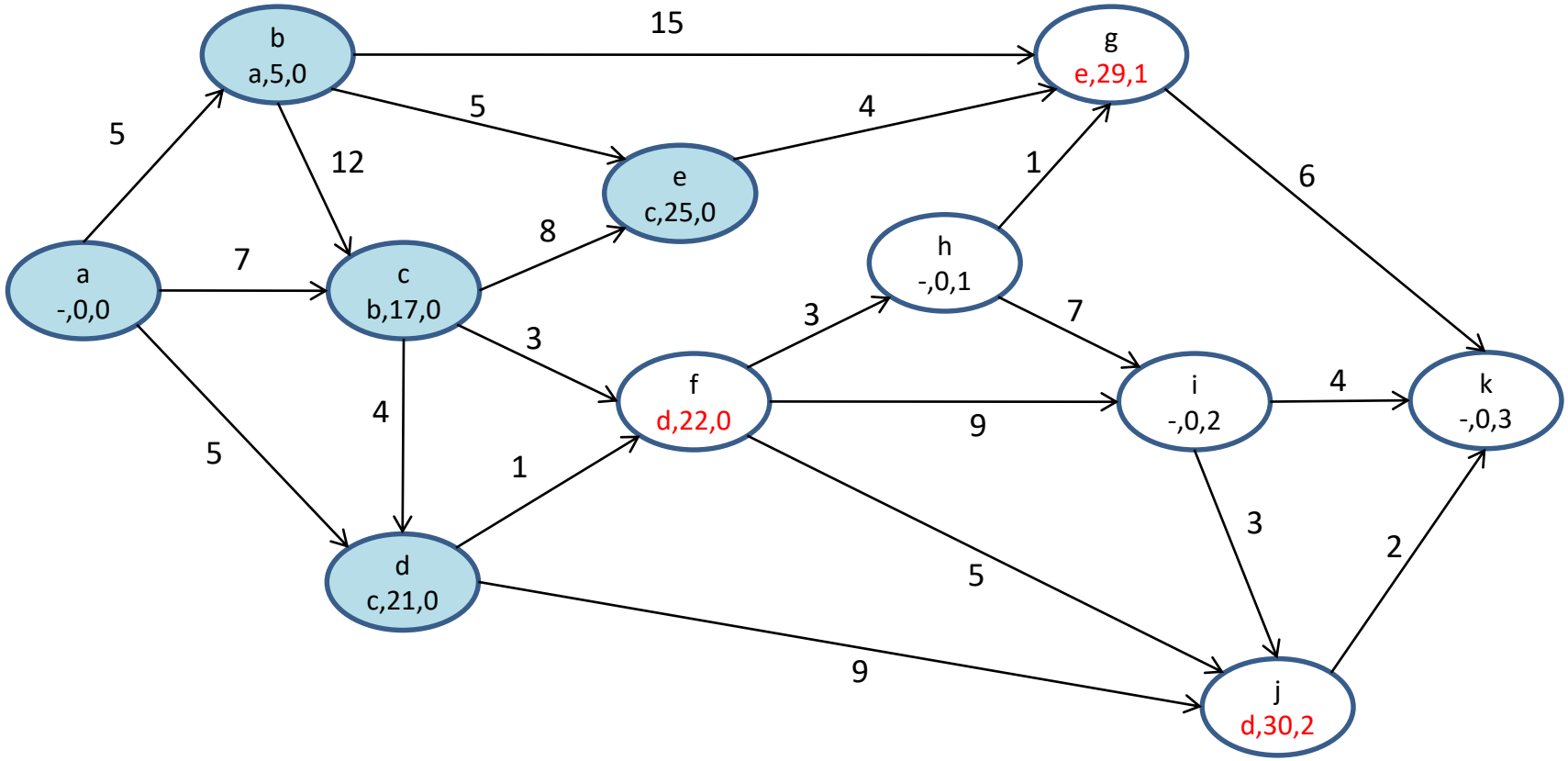
ANALIZA KRITIČNE POTI

Seznam vozlišč, katerih naslednikov še nismo pregledali:



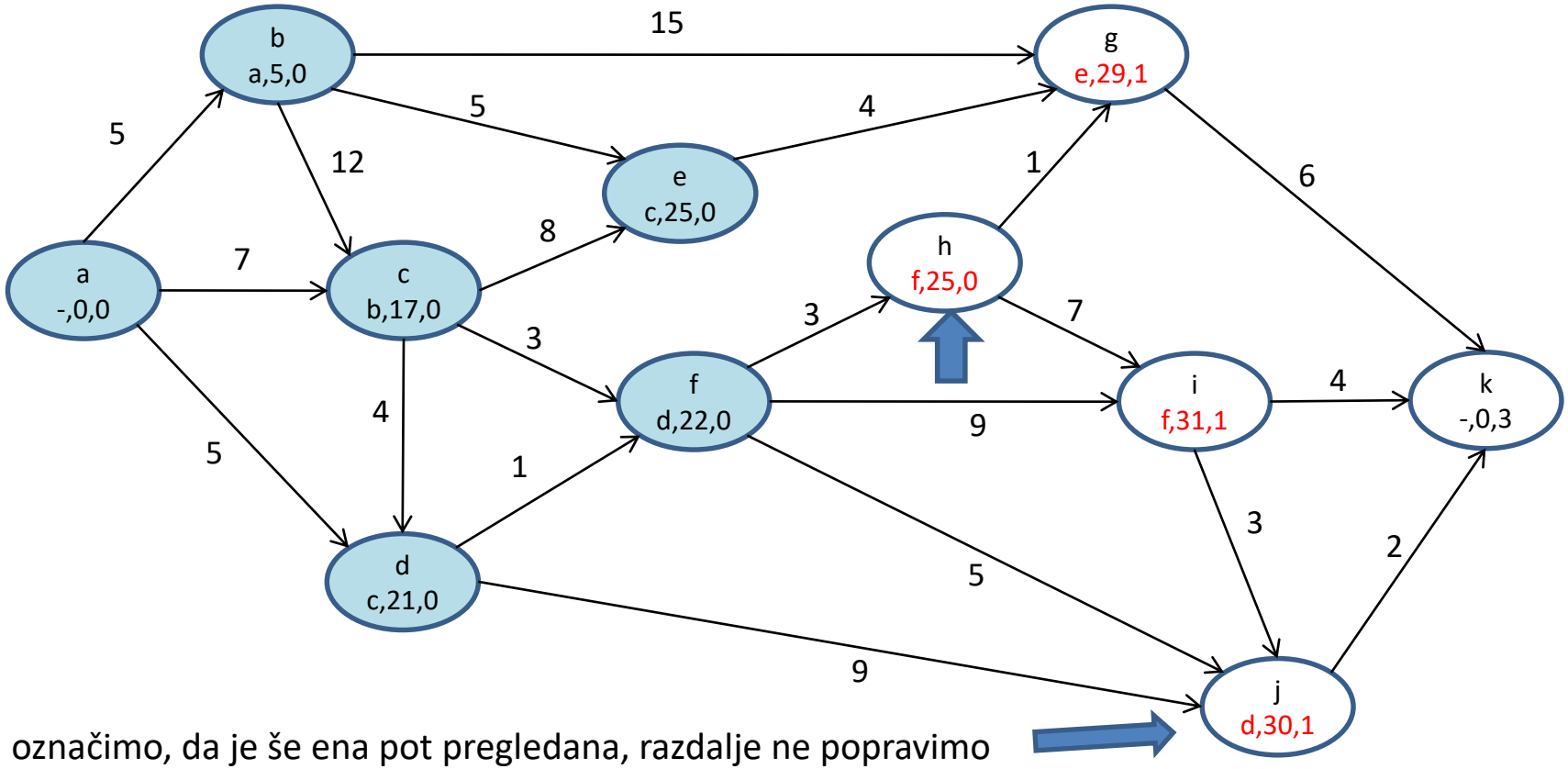
ANALIZA KRITIČNE POTI

Seznam vozlišč, katerih naslednikov še nismo pregledali:



ANALIZA KRITIČNE POTI

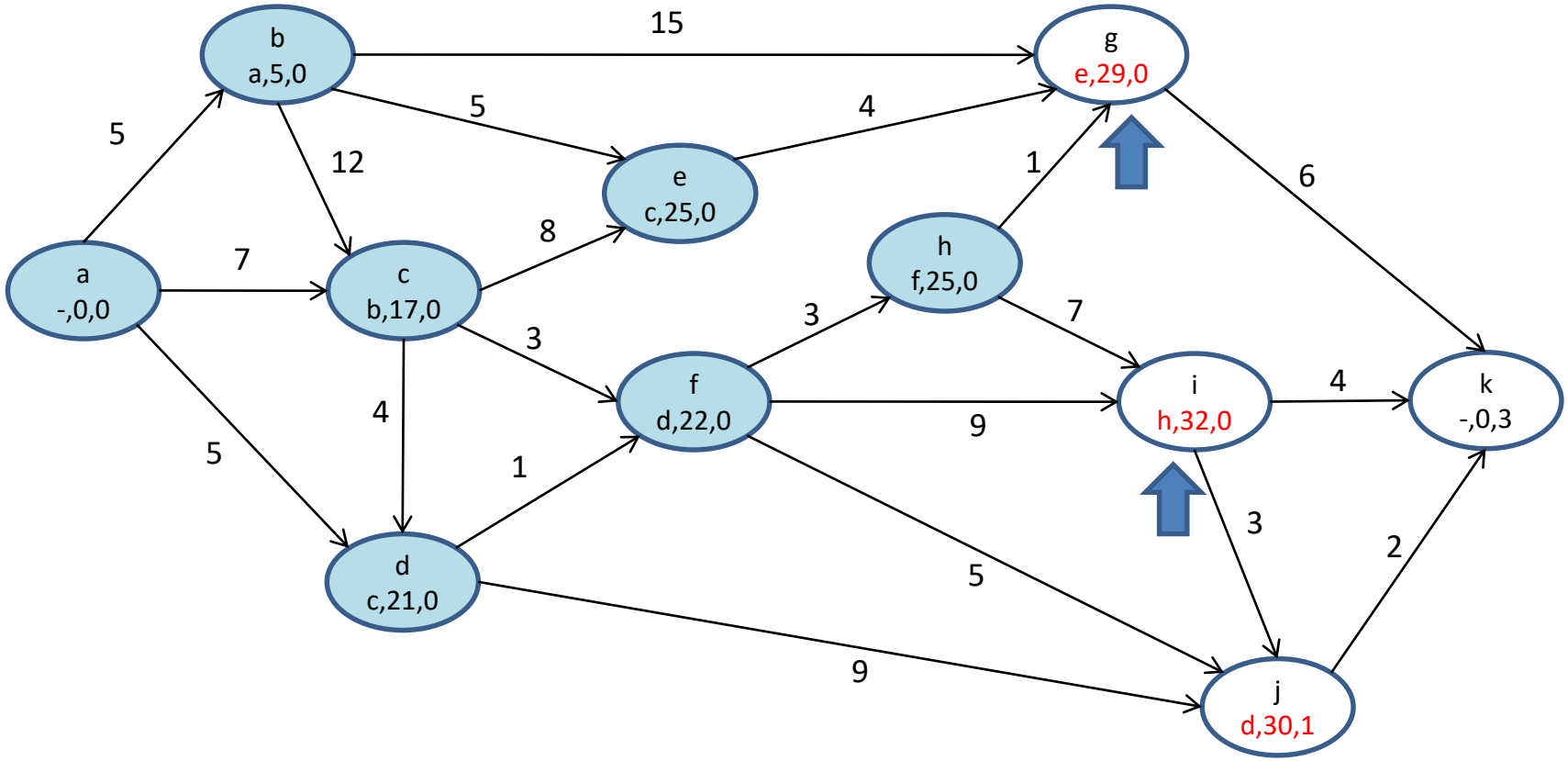
Seznam vozlišč, katerih naslednikov še nismo pregledali:



označimo, da je še ena pot pregledana, razdalje ne popravimo

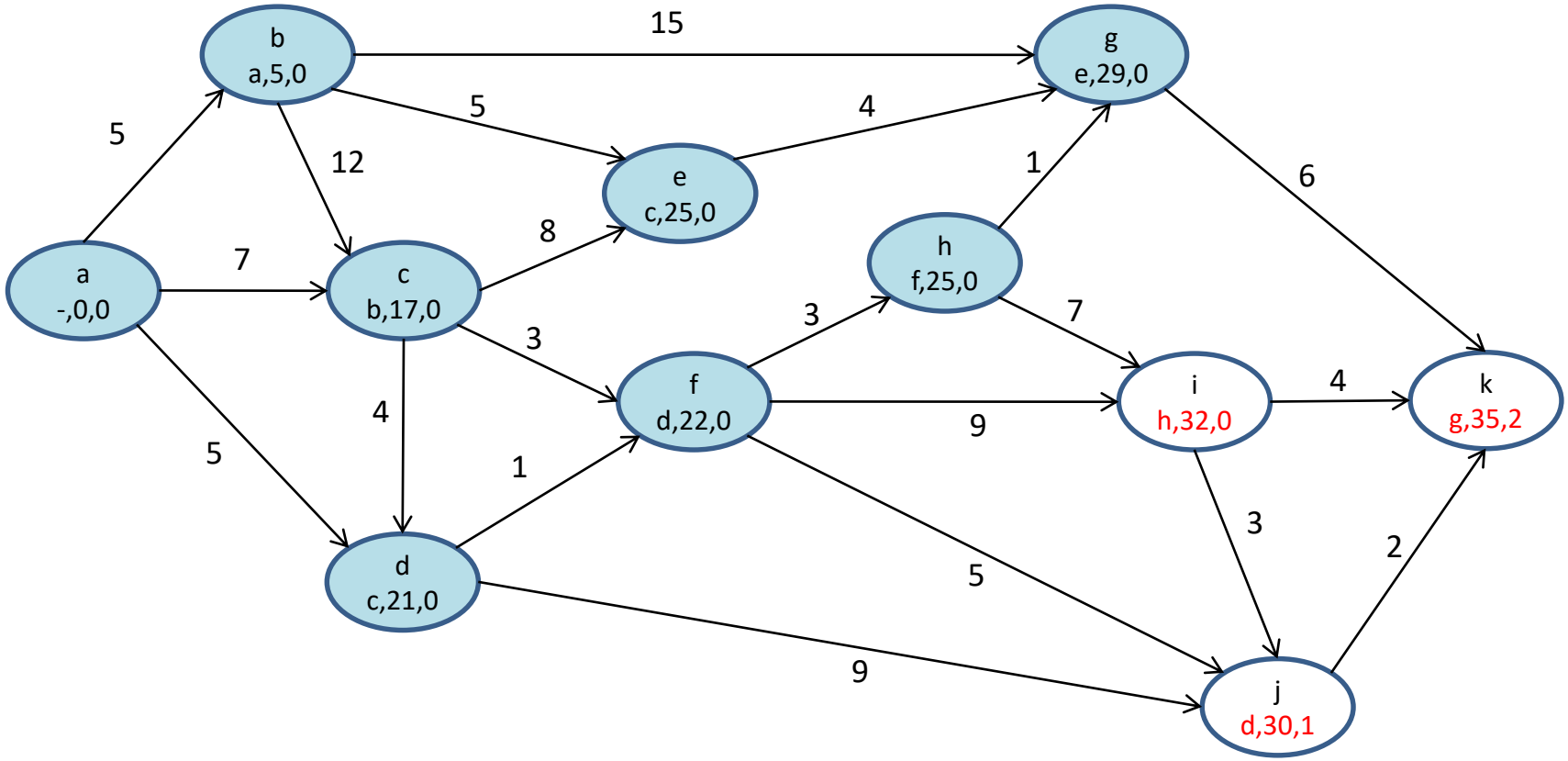
ANALIZA KRITIČNE POTI

Seznam vozlišč, katerih naslednikov še nismo pregledali:



ANALIZA KRITIČNE POTI

Seznam vozlišč, katerih naslednikov še nismo pregledali:



ANALIZA KRITIČNE POTI

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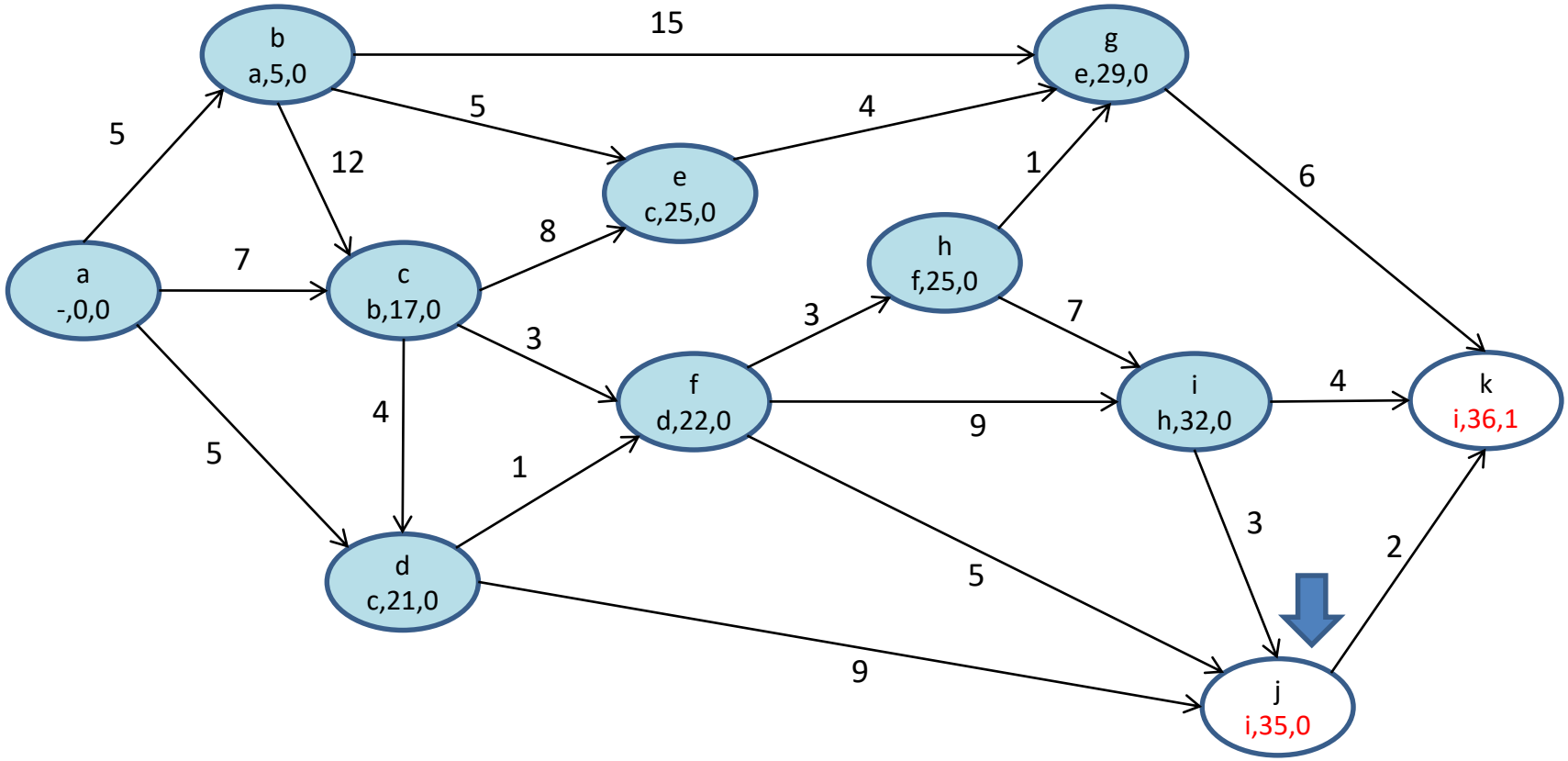

ANALIZA KRITIČNE POTI

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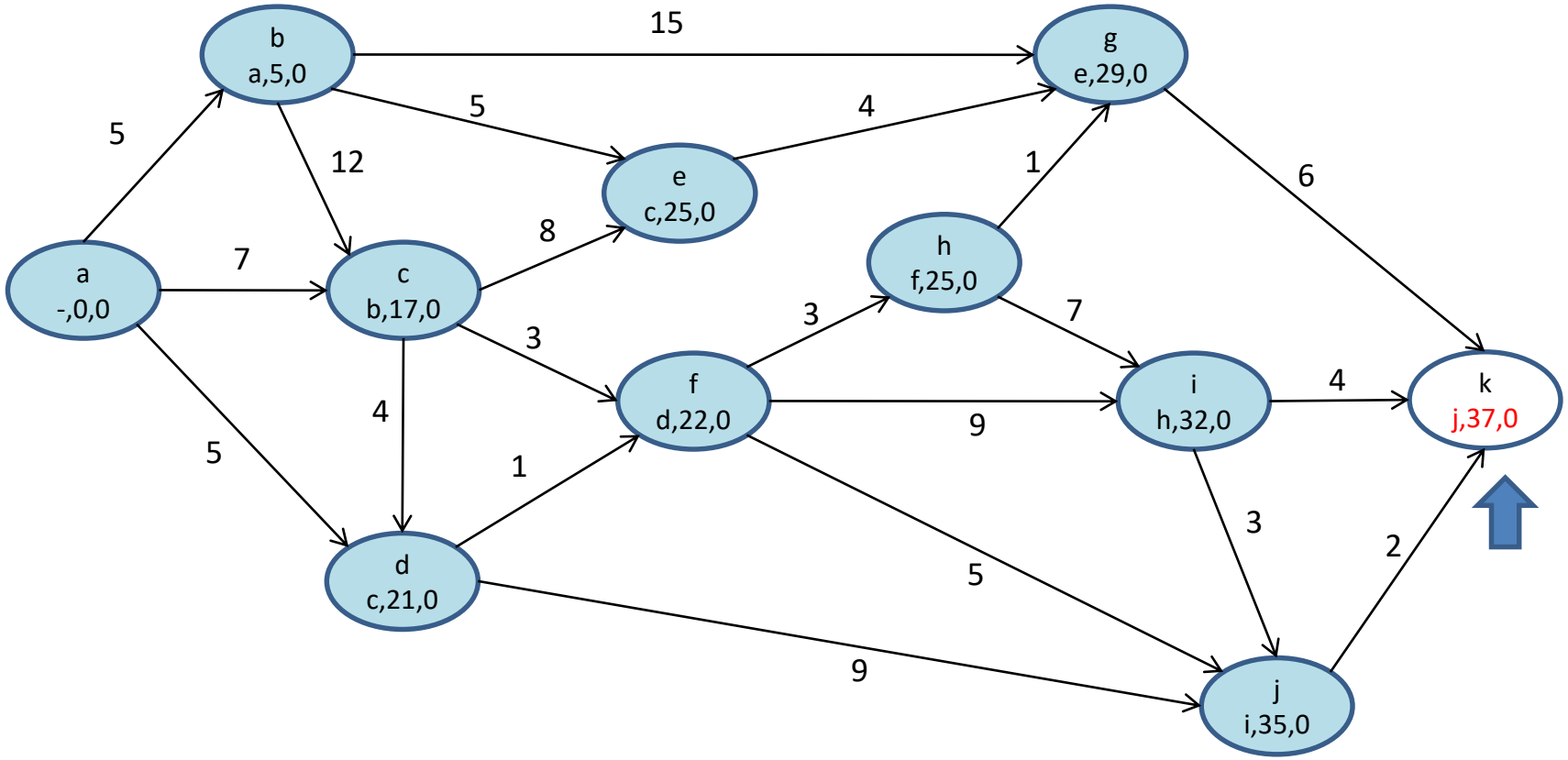
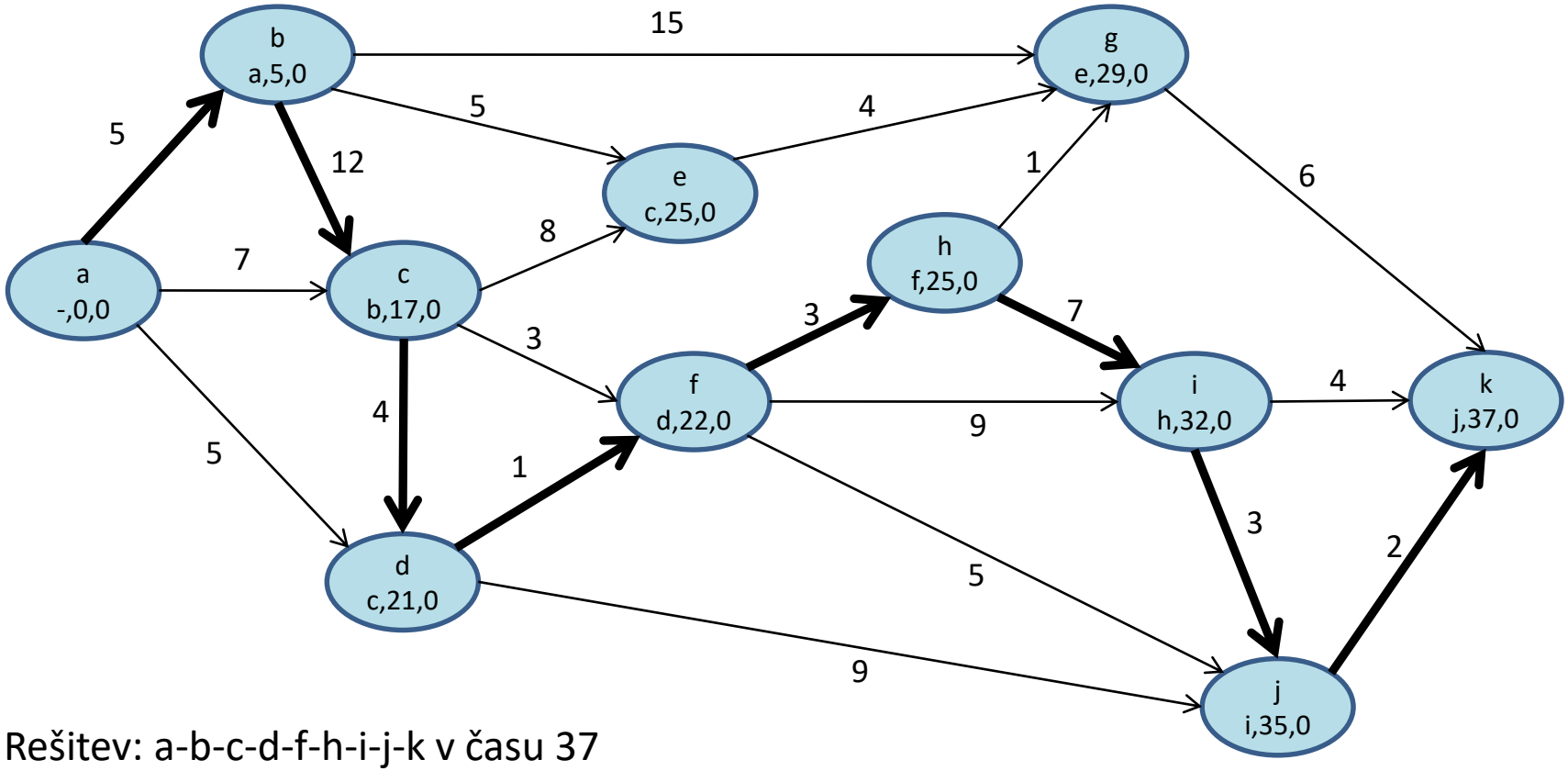


ANALIZA KRITIČNE POTI

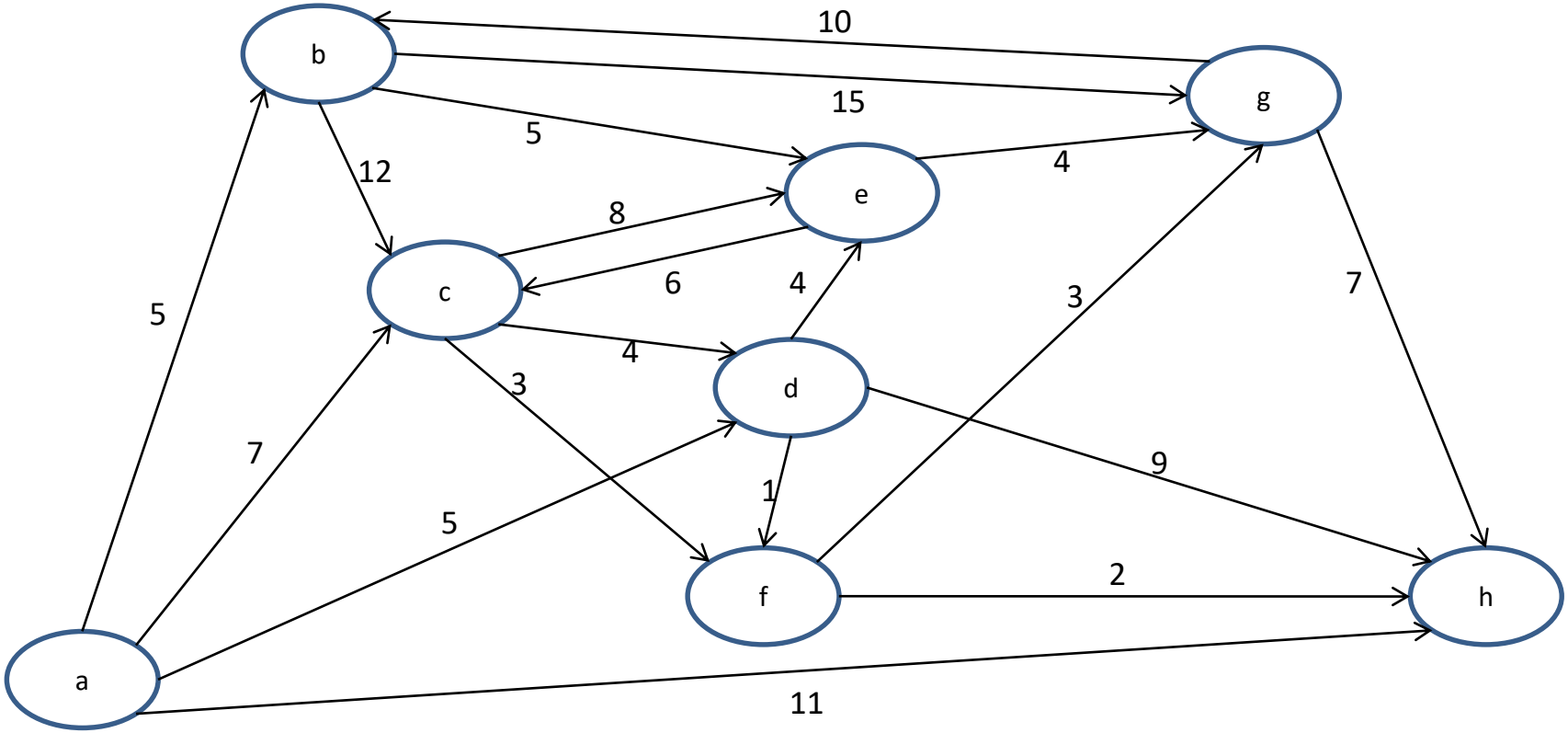
Seznam vozlišč, katerih naslednikov še nismo pregledali:



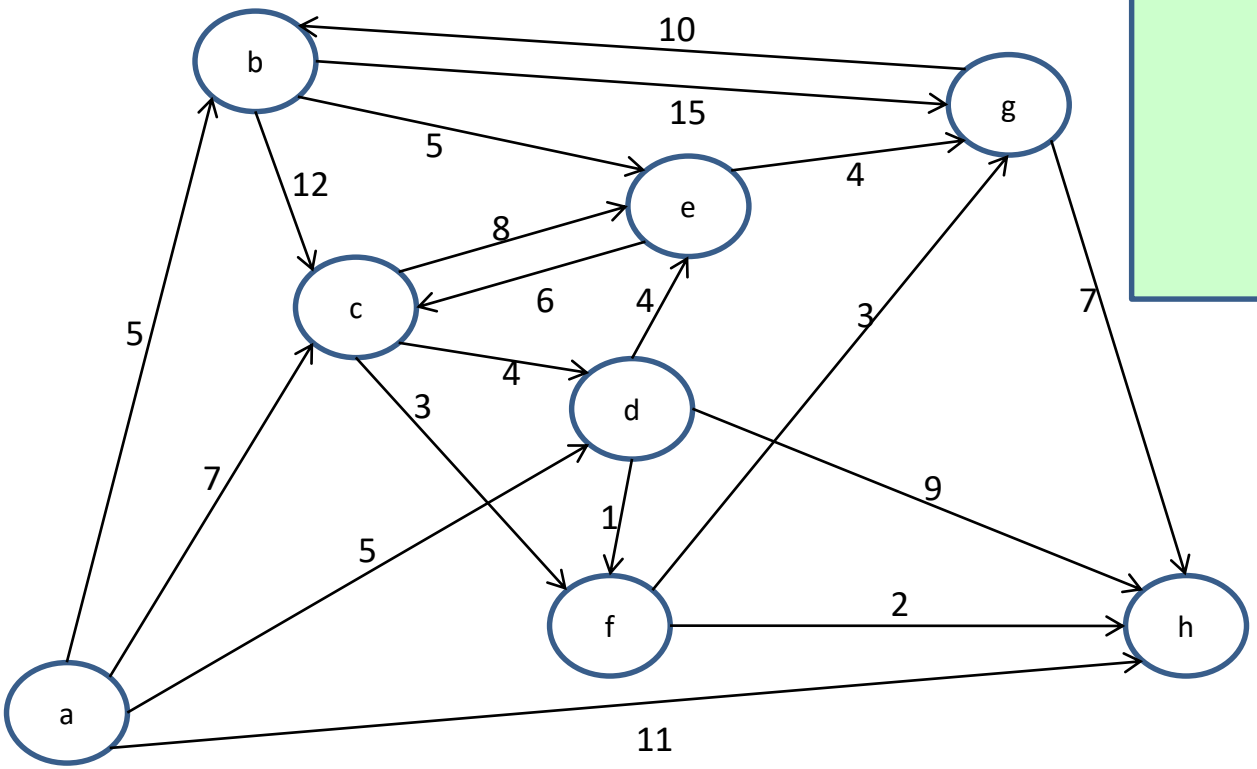
Rešitev: a-b-c-d-f-h-i-j-k v času 37

DIJKSTRA

Podan je graf na sliki. Poiščite najkrajše poti od vozlišča ‘a’ do vseh ostalih vozlišč v grafu.



DIJKSTRA



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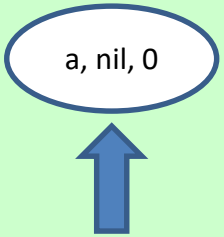
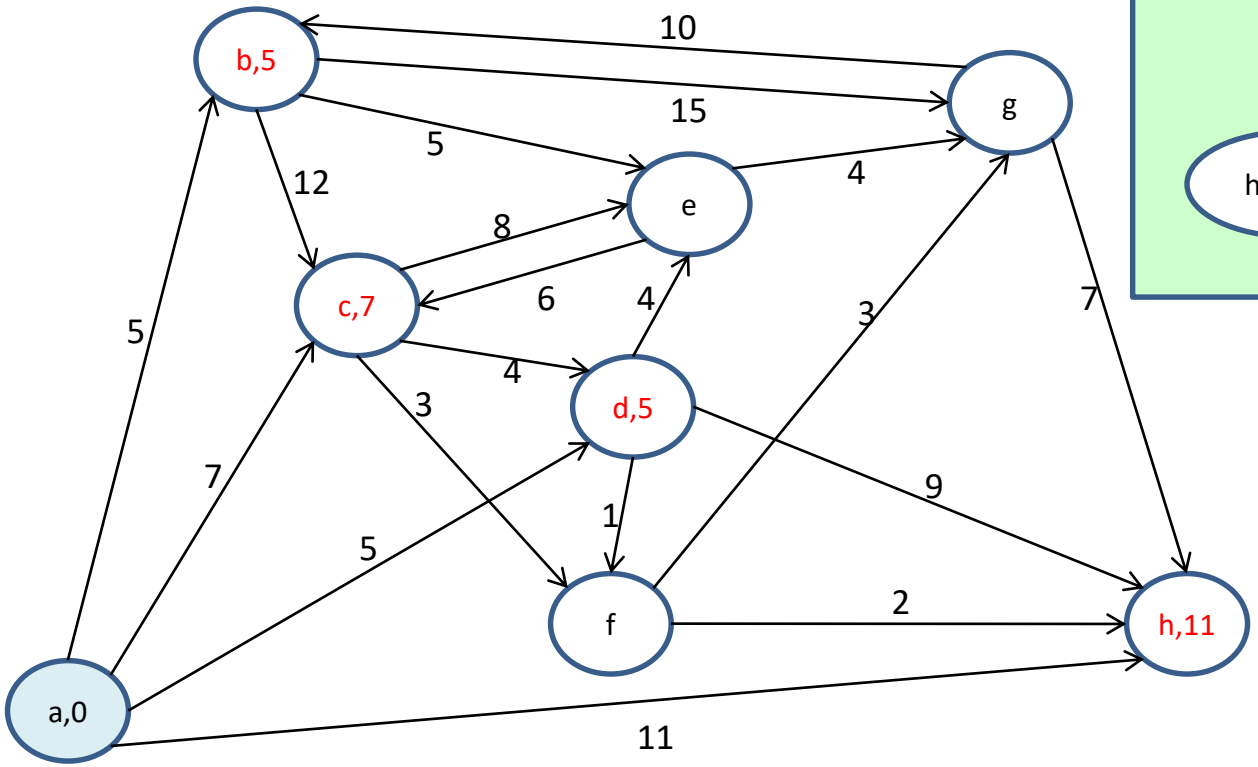


zapis vsebuje:

- ime vozlišča
- ime očeta v vpetem drevesu
- dolžino najkrajše znane poti od začetnega vozlišča

DIJKSTRA



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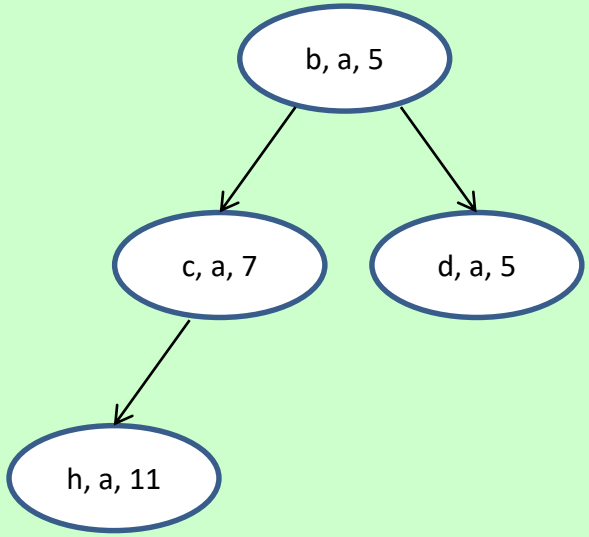
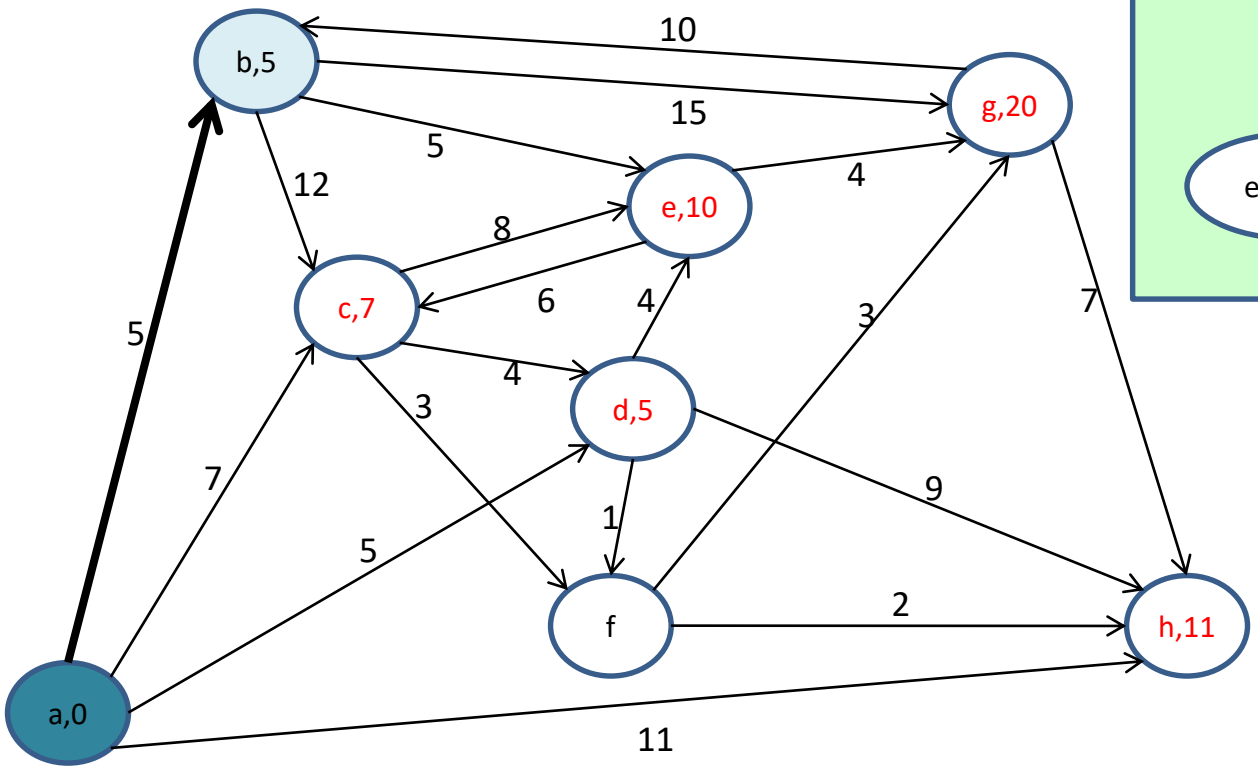


DIJKSTRA



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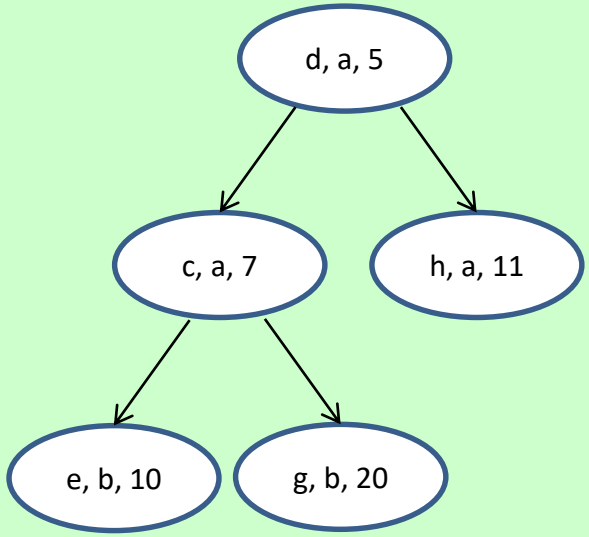

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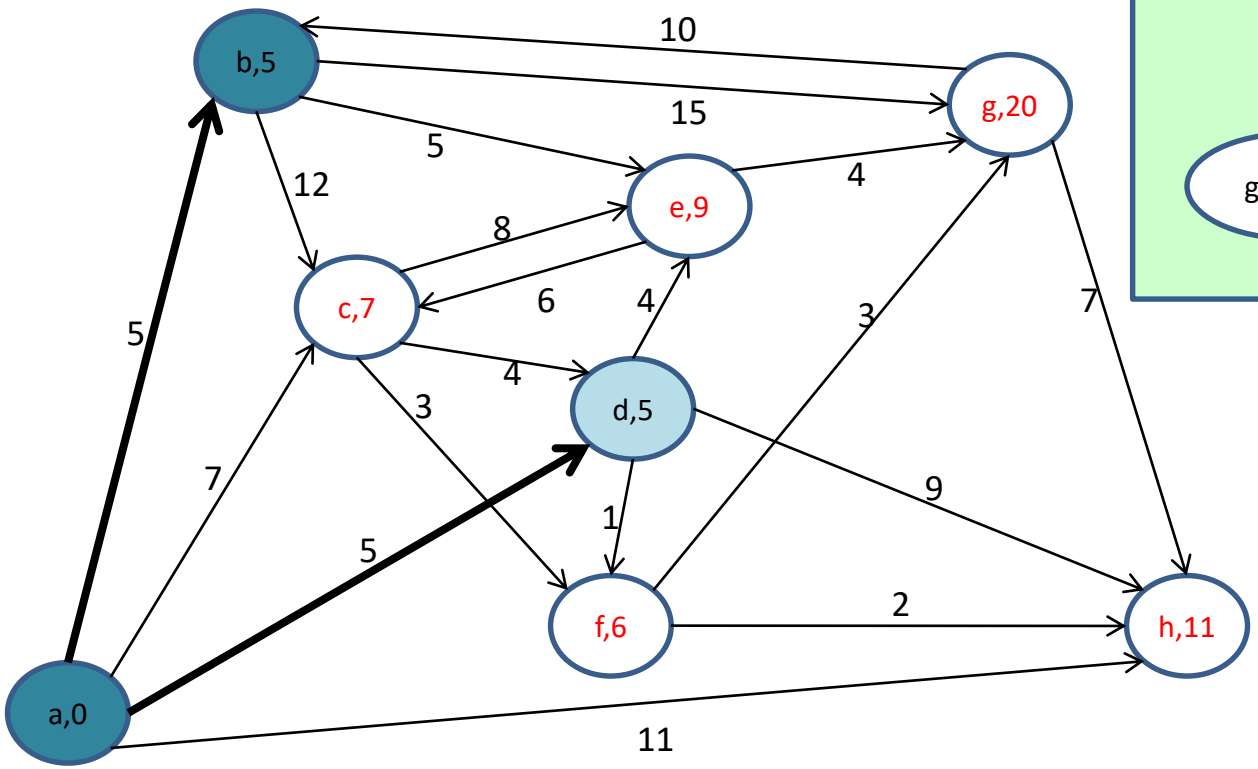

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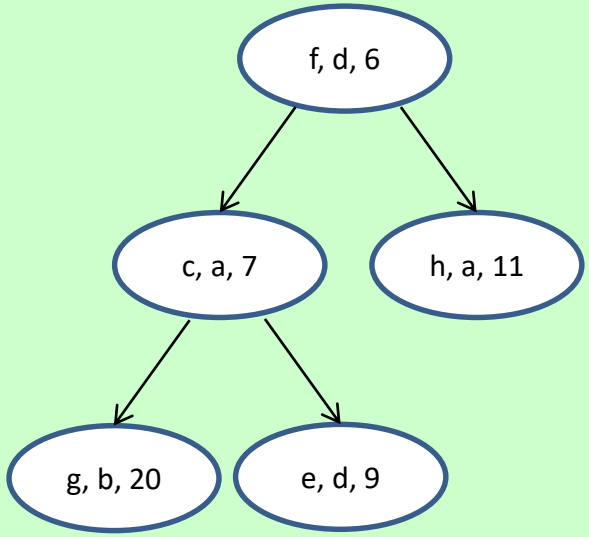
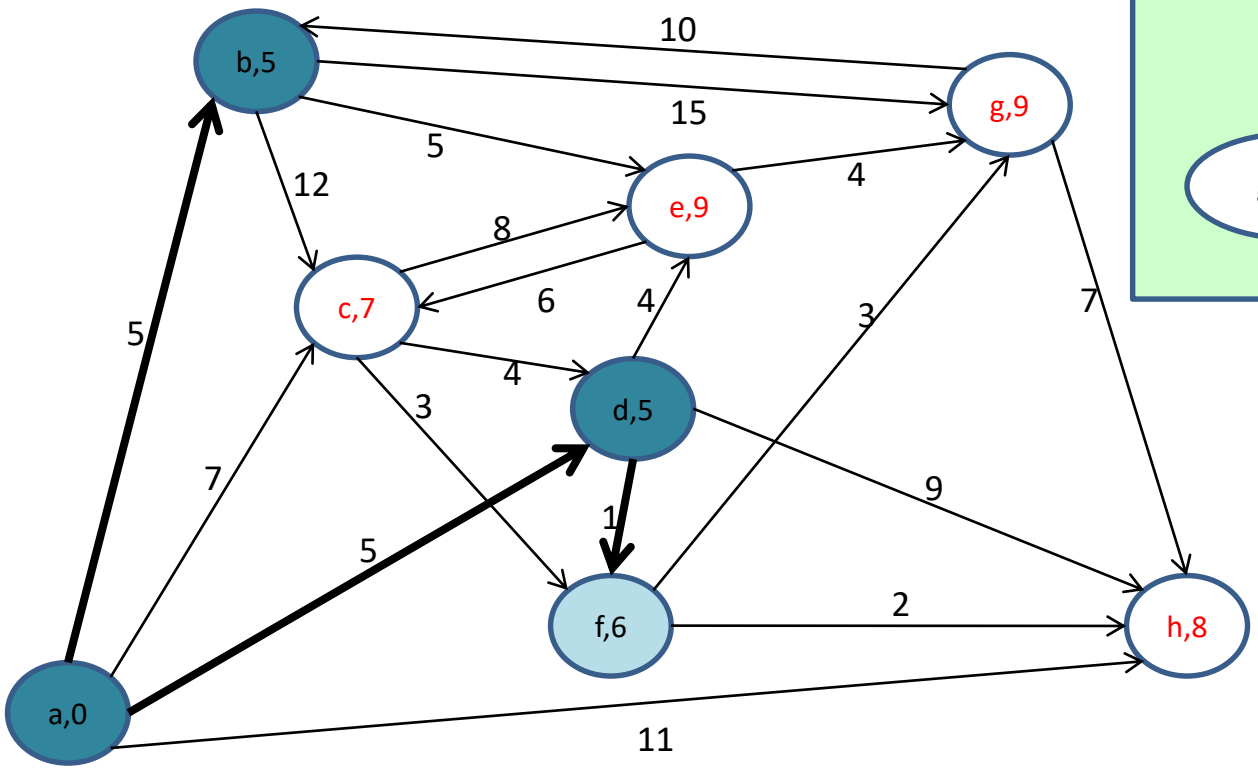


DIJKSTRA



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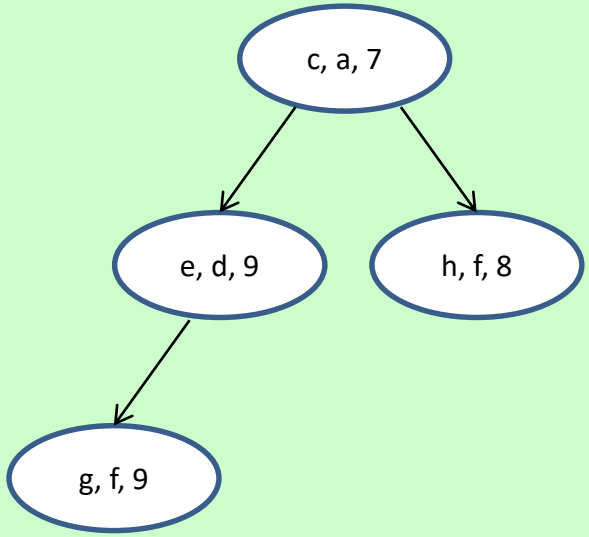

DIJKSTRA

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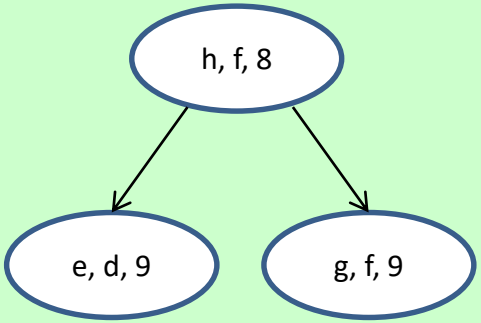

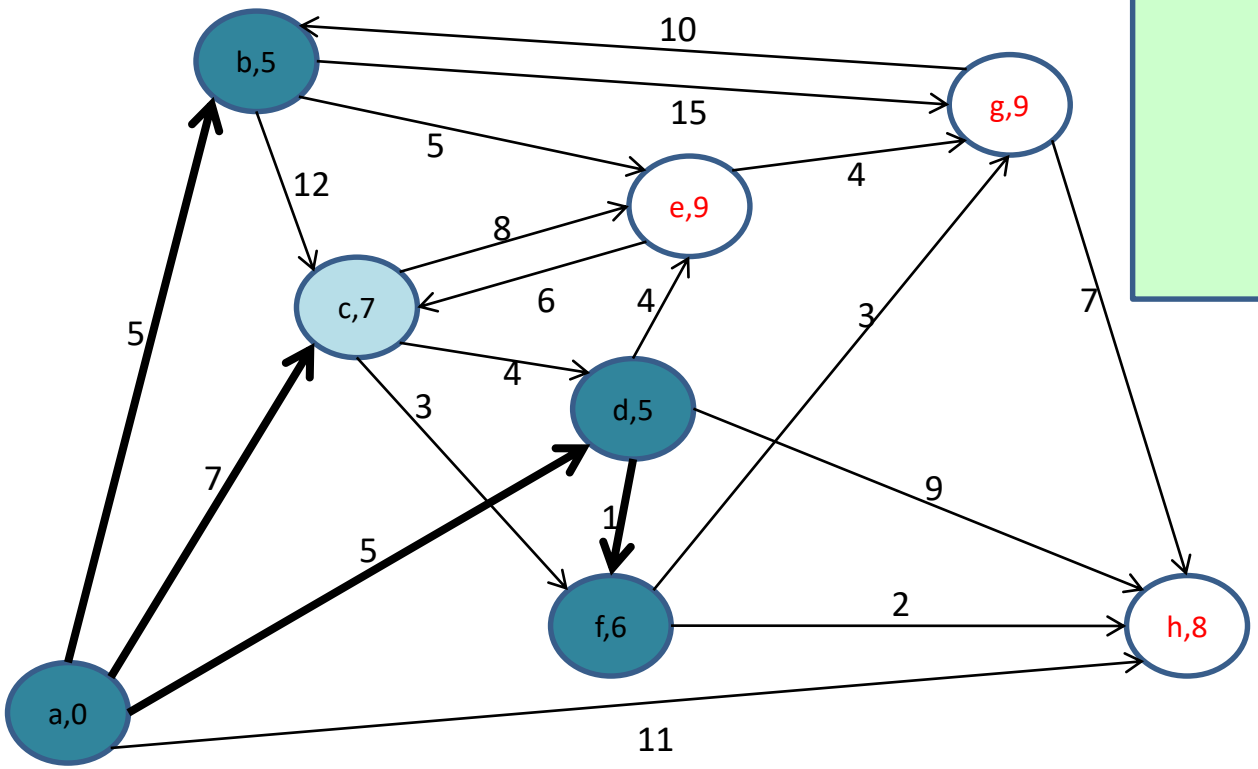

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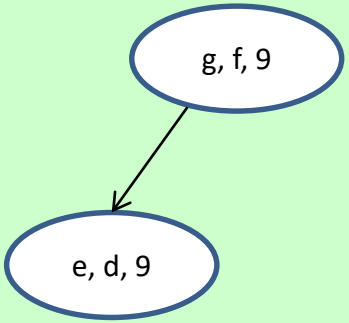

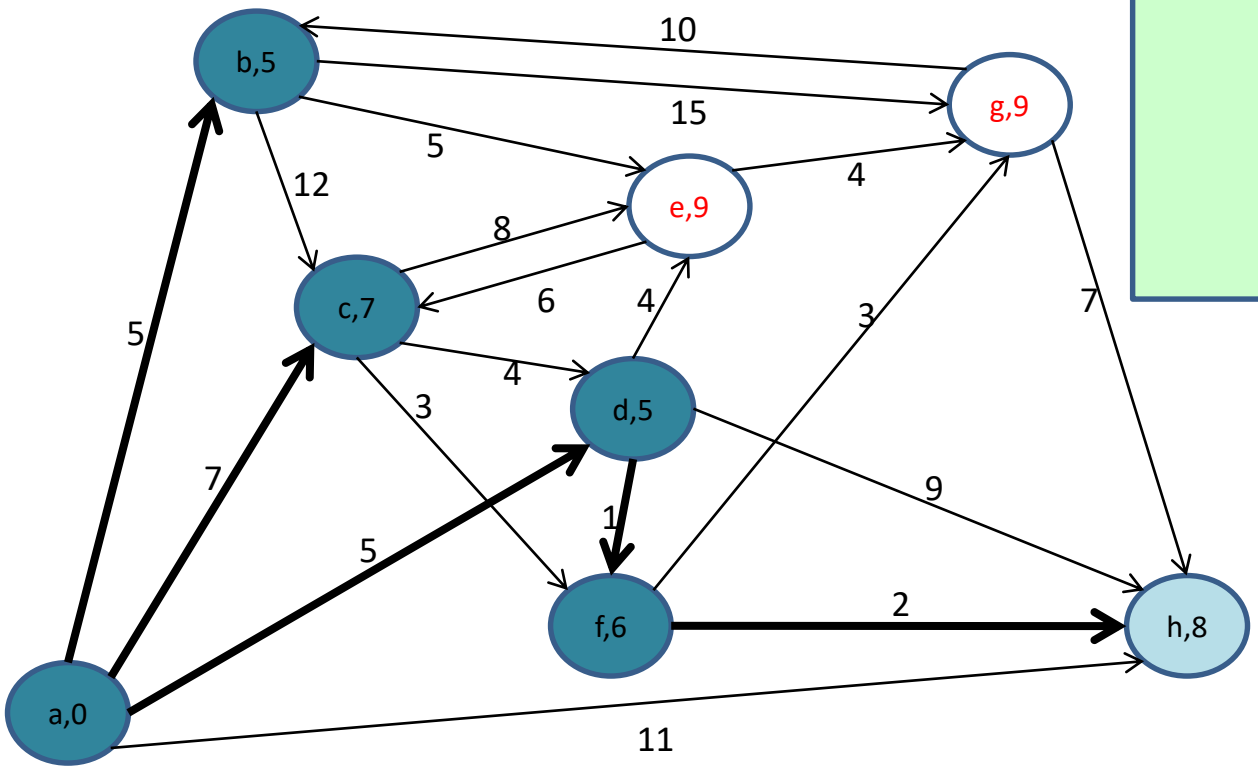

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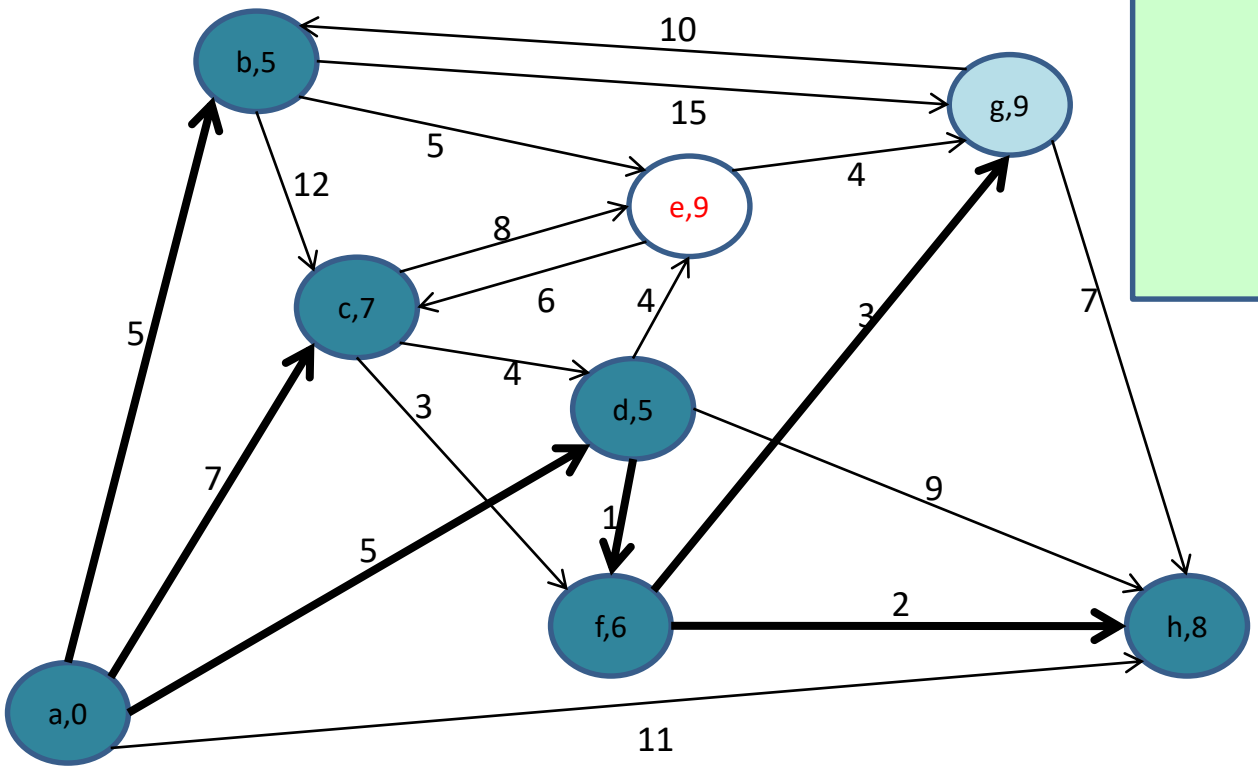

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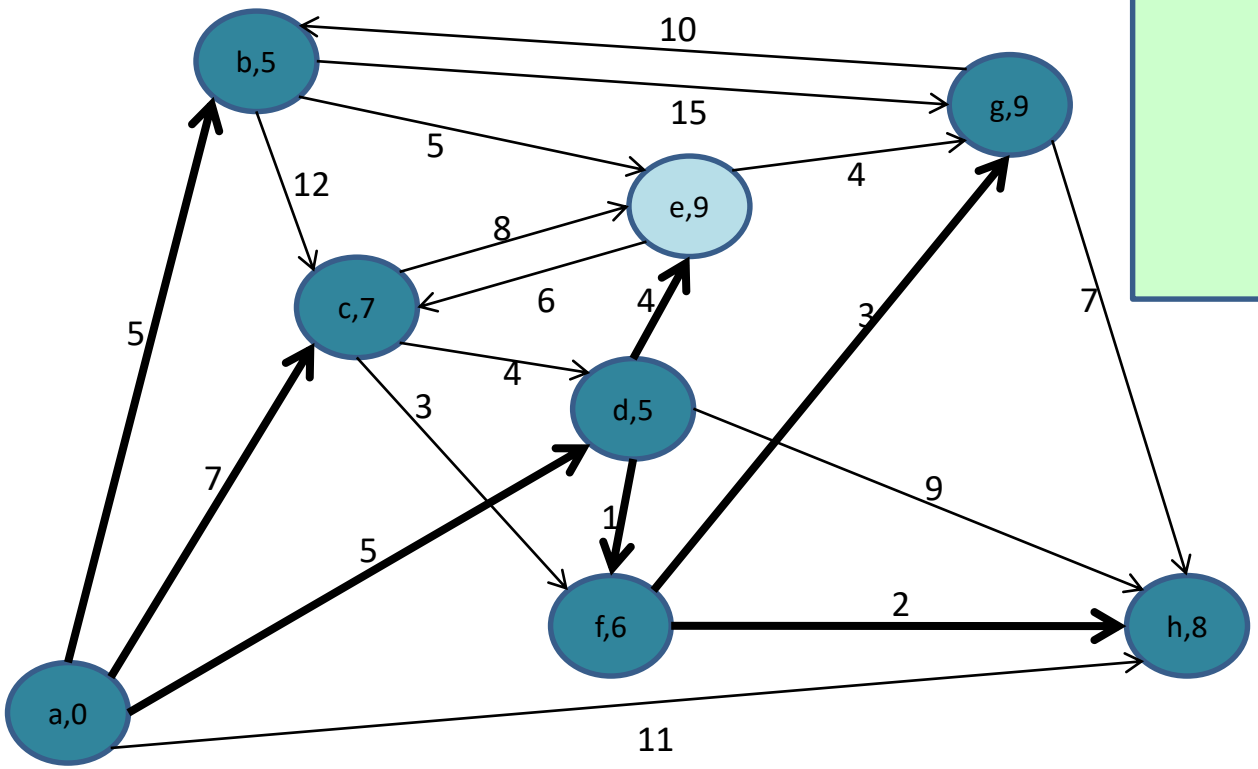
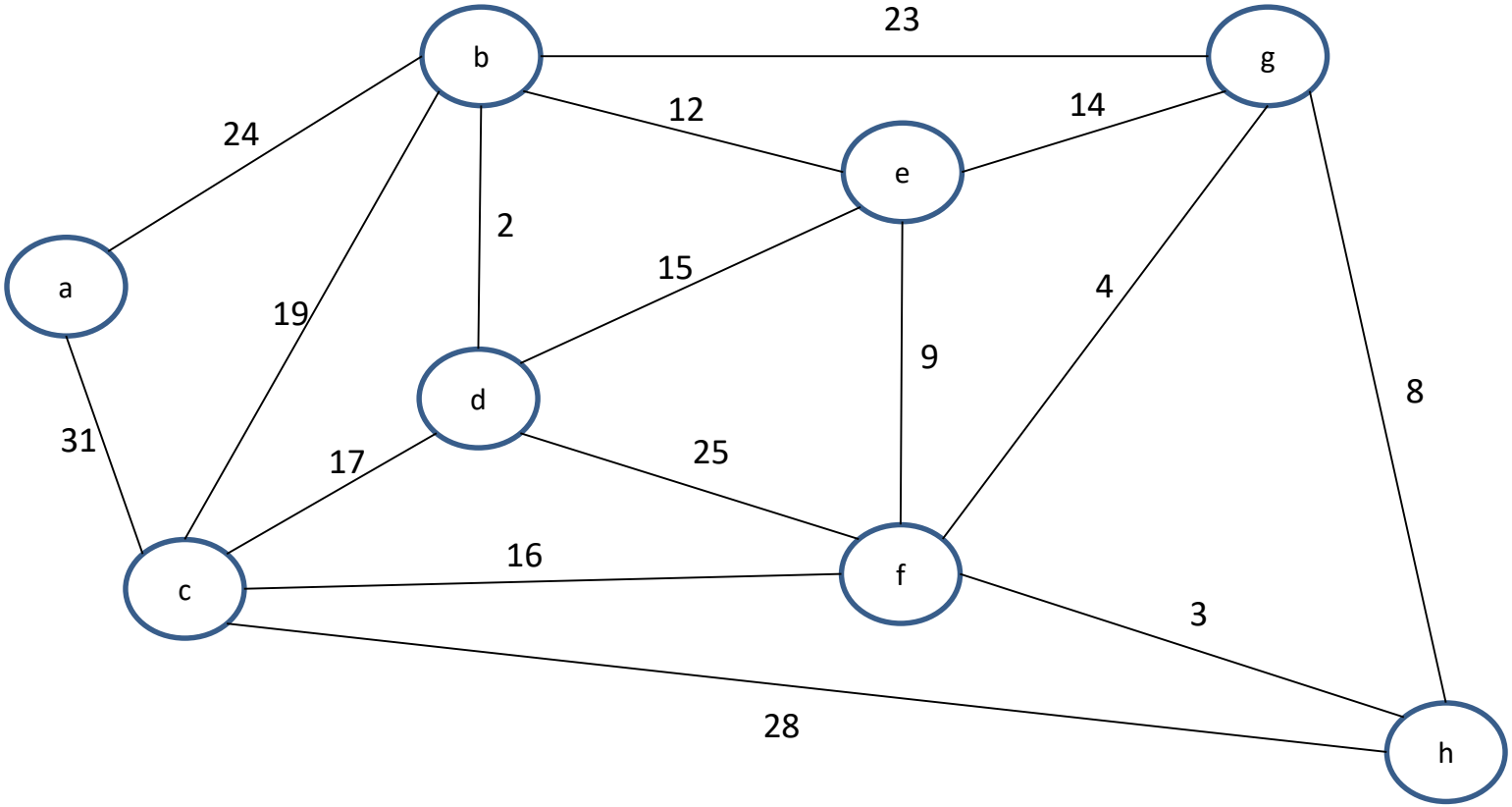


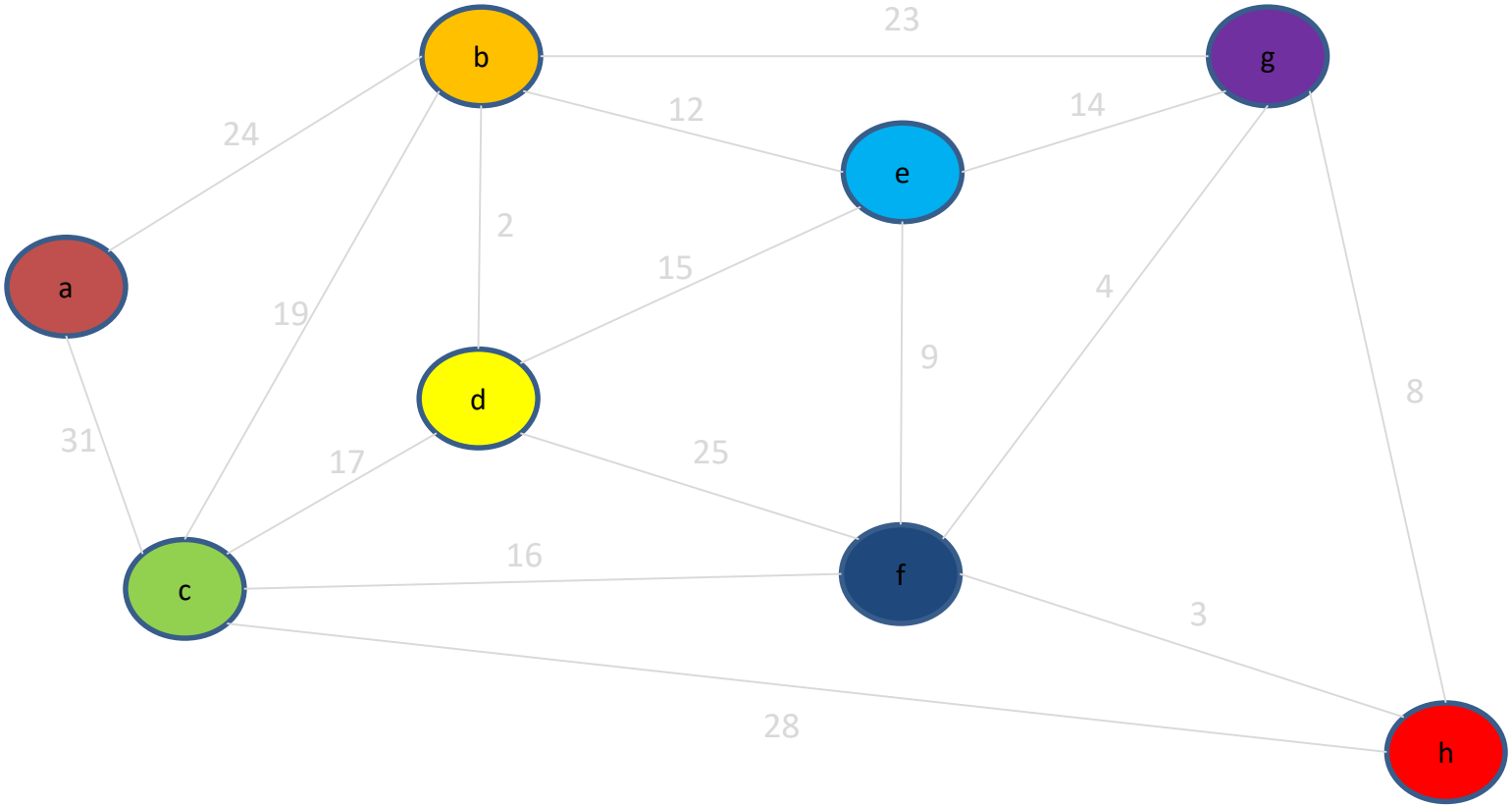
prioritetna vrsta je prazna kar pomeni, da je postopek končan

MINIMALNO VPETO DREVO

Za graf na sliki poiščite minimalno vpeto drevo z izvajanjem Kruskalovega algoritma.



MINIMALNO VPETO DREVO



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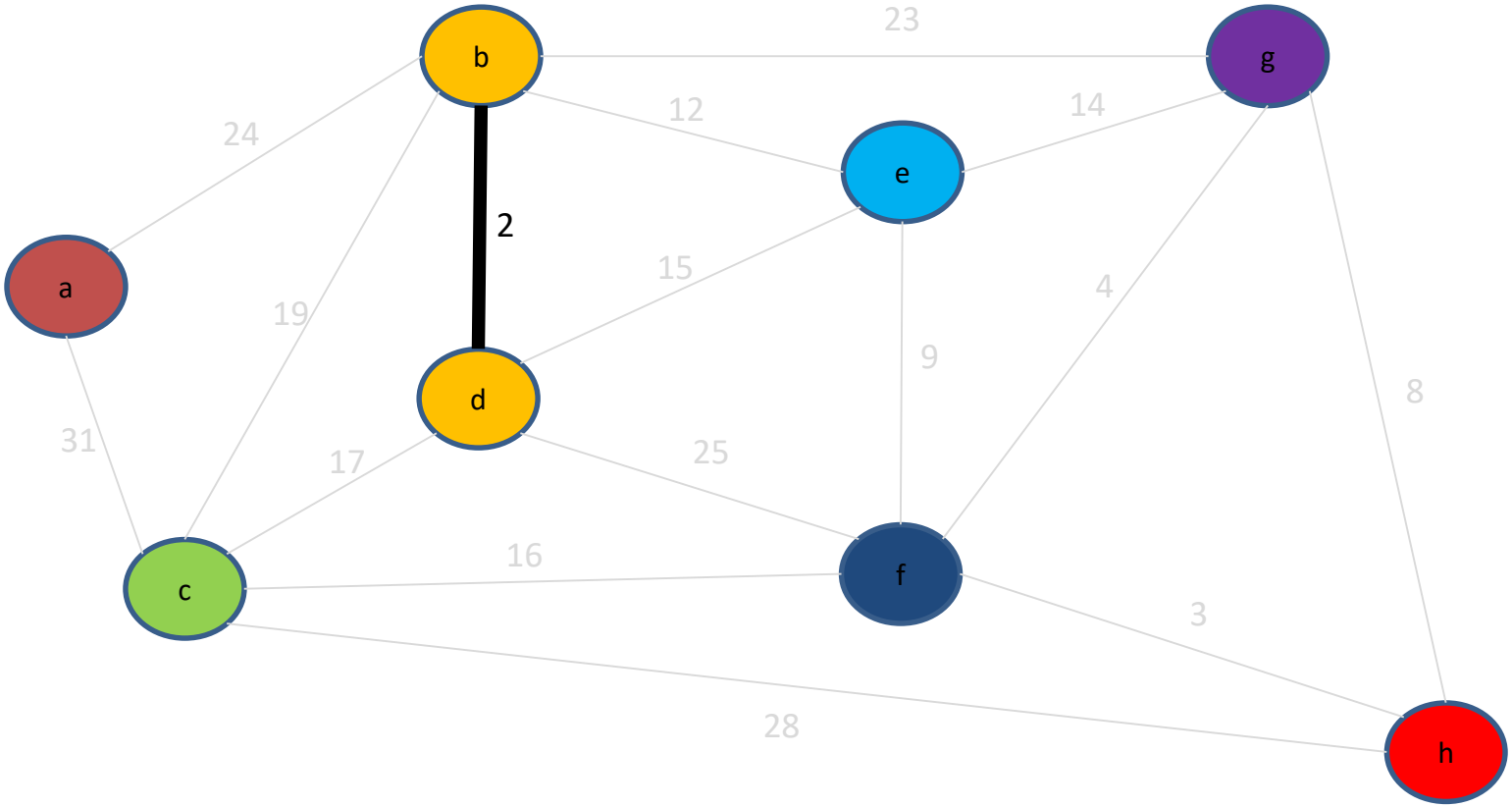

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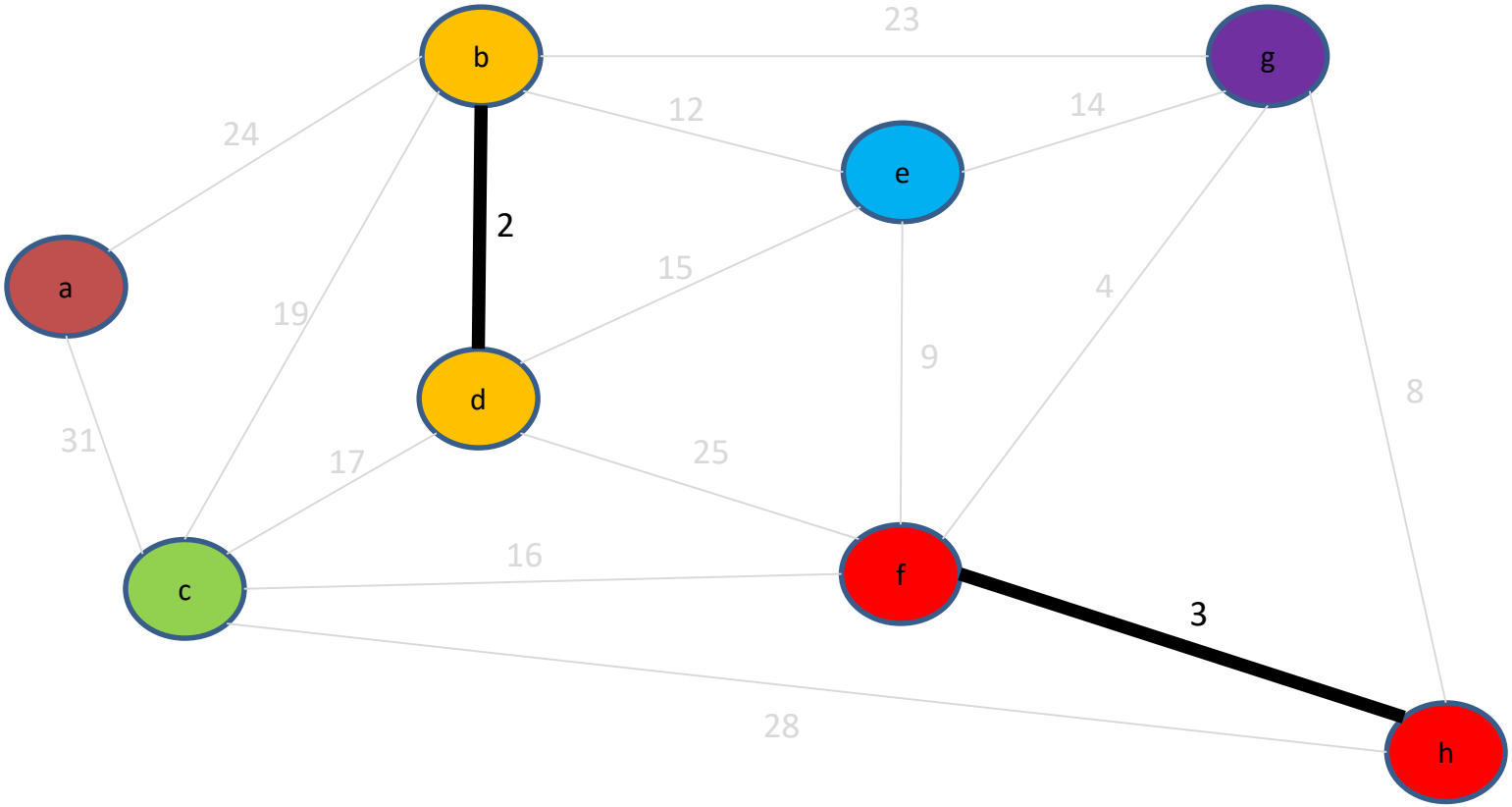

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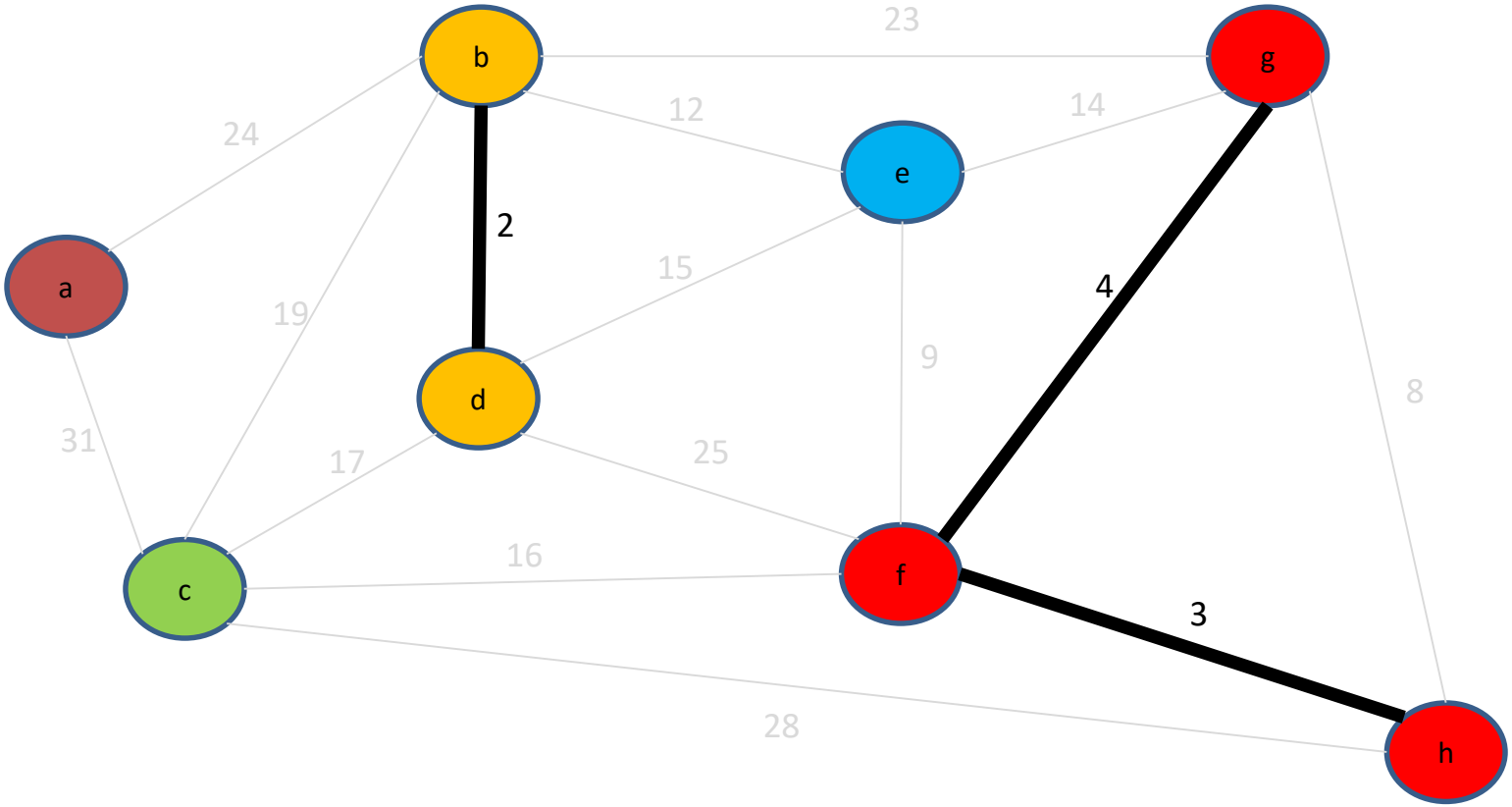

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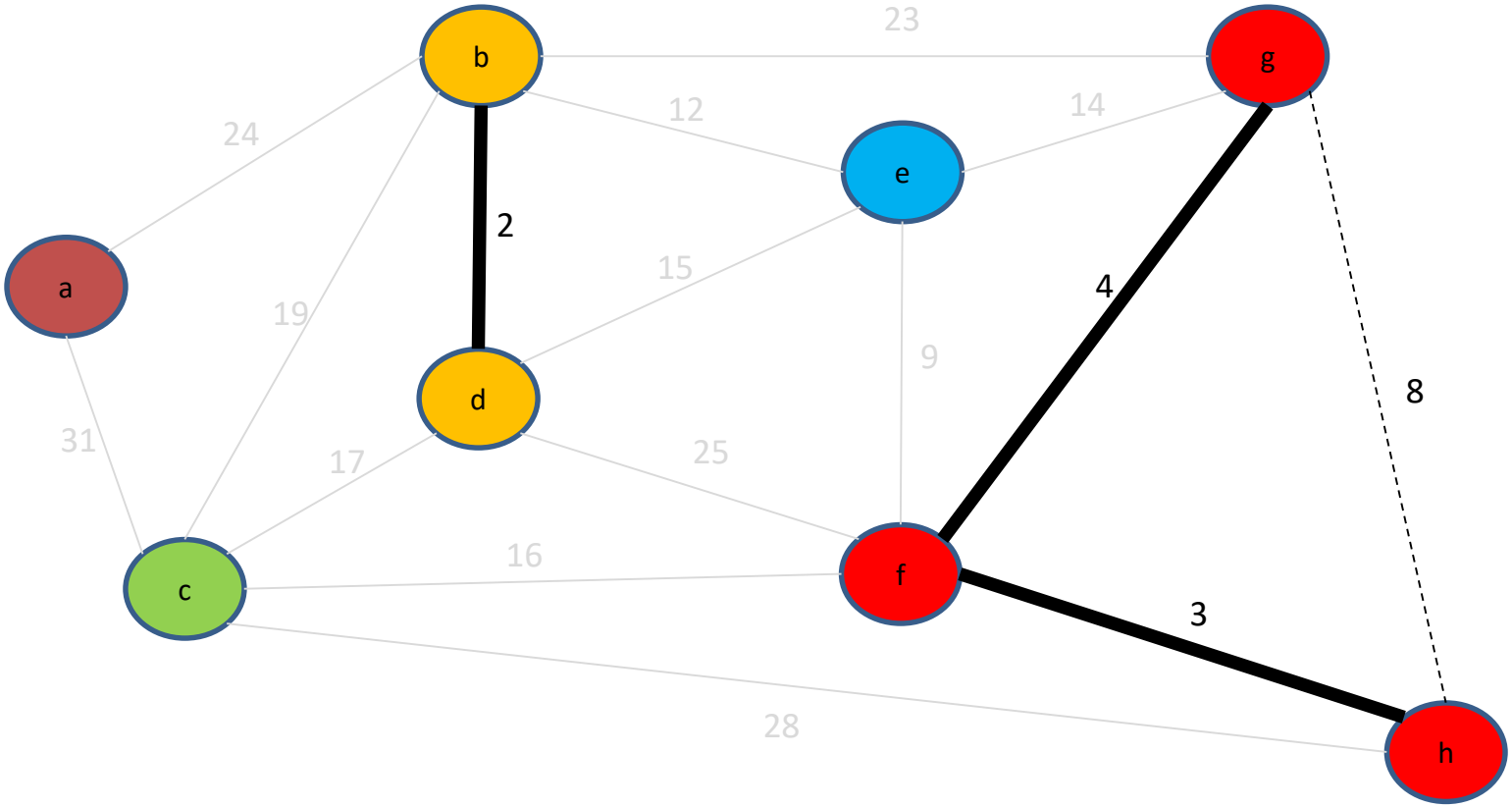

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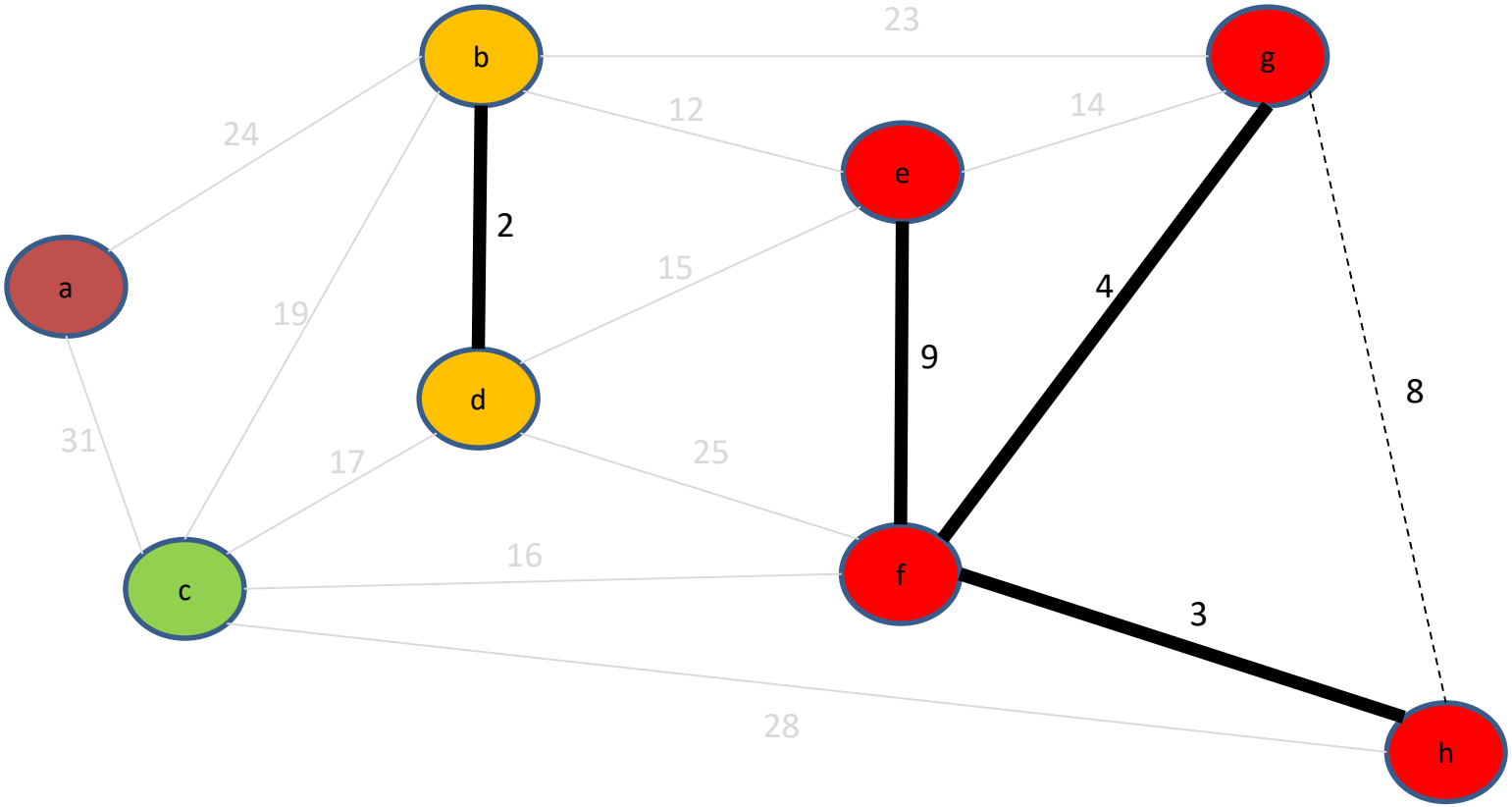

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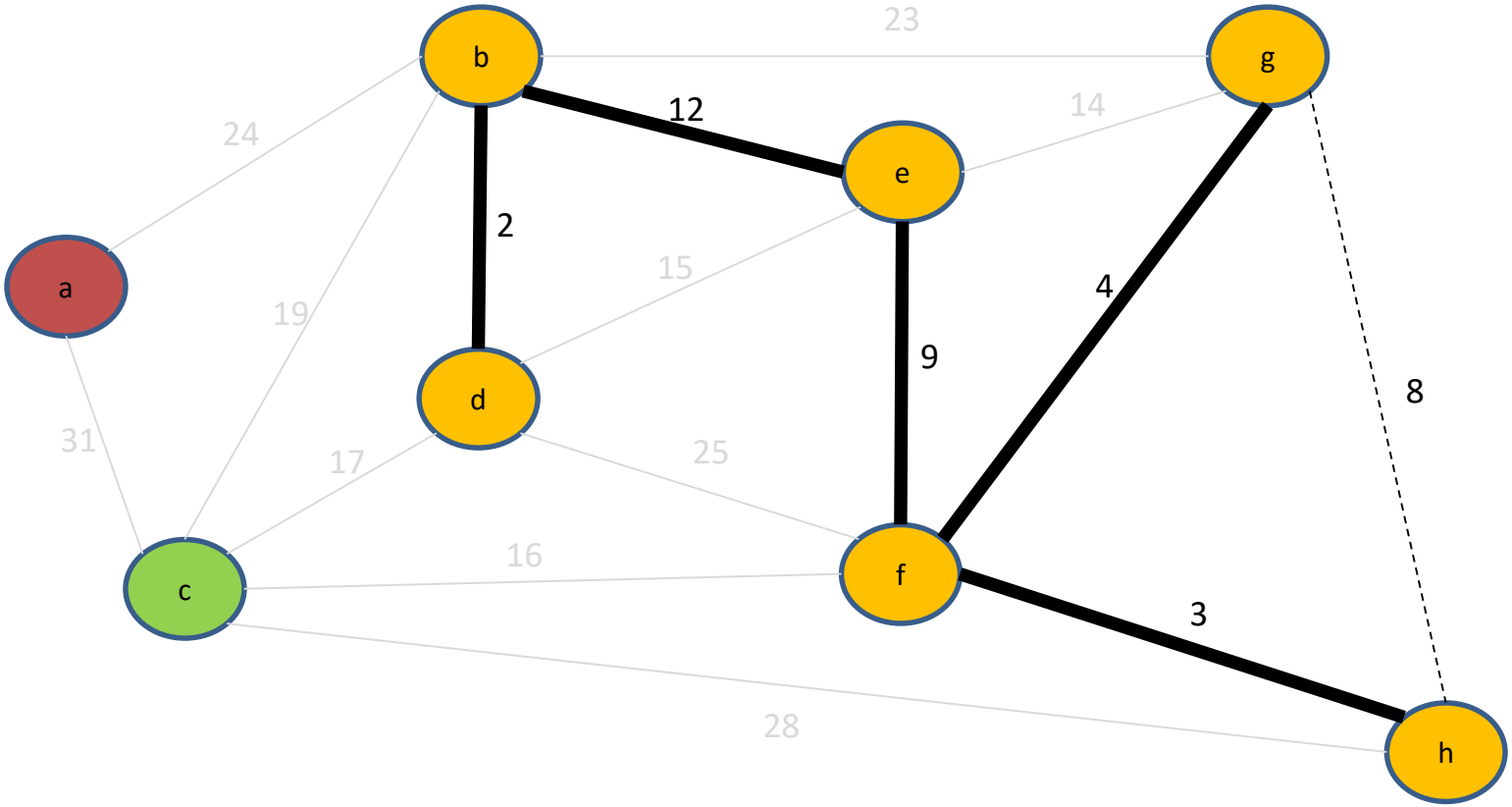

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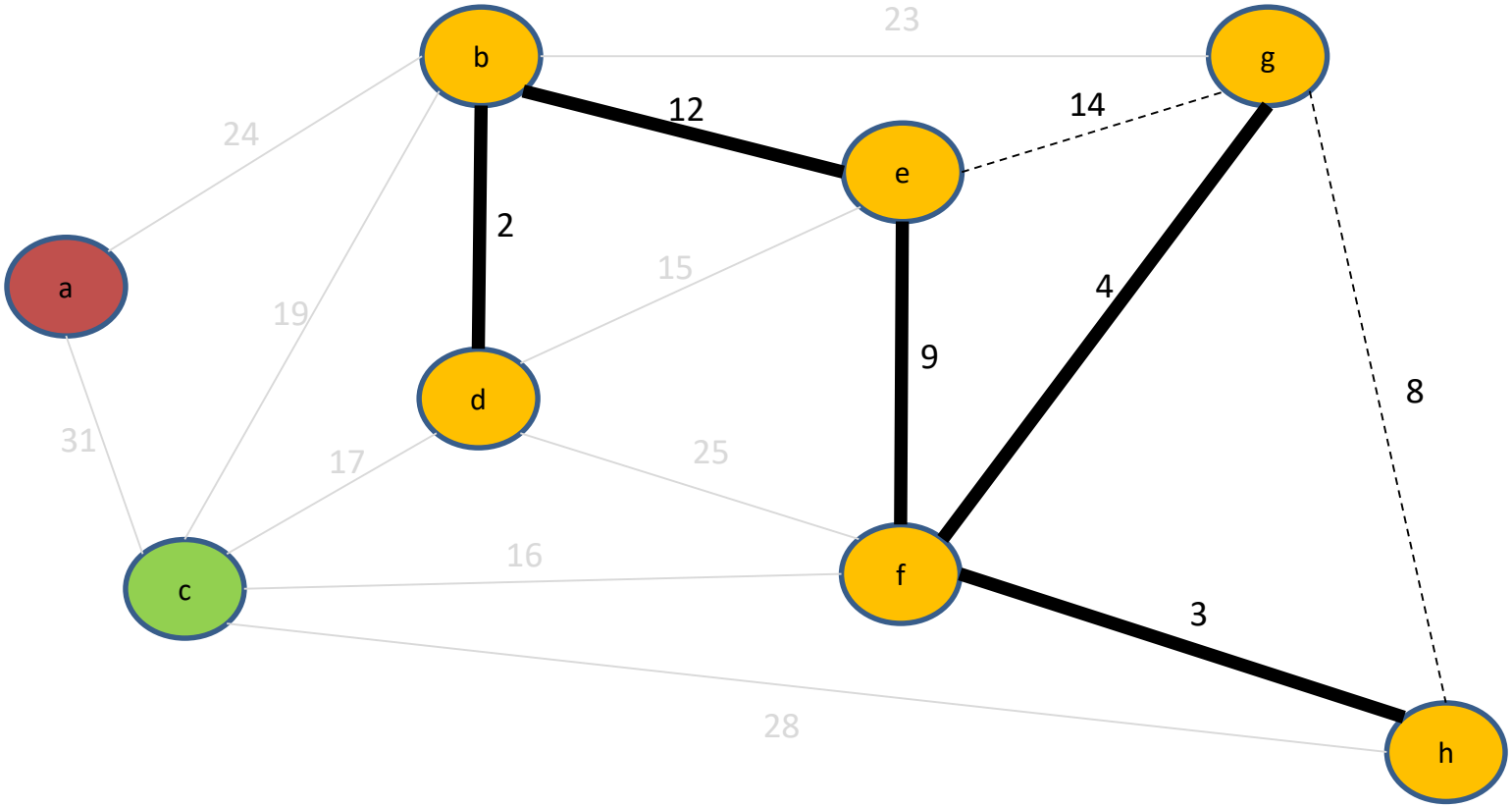

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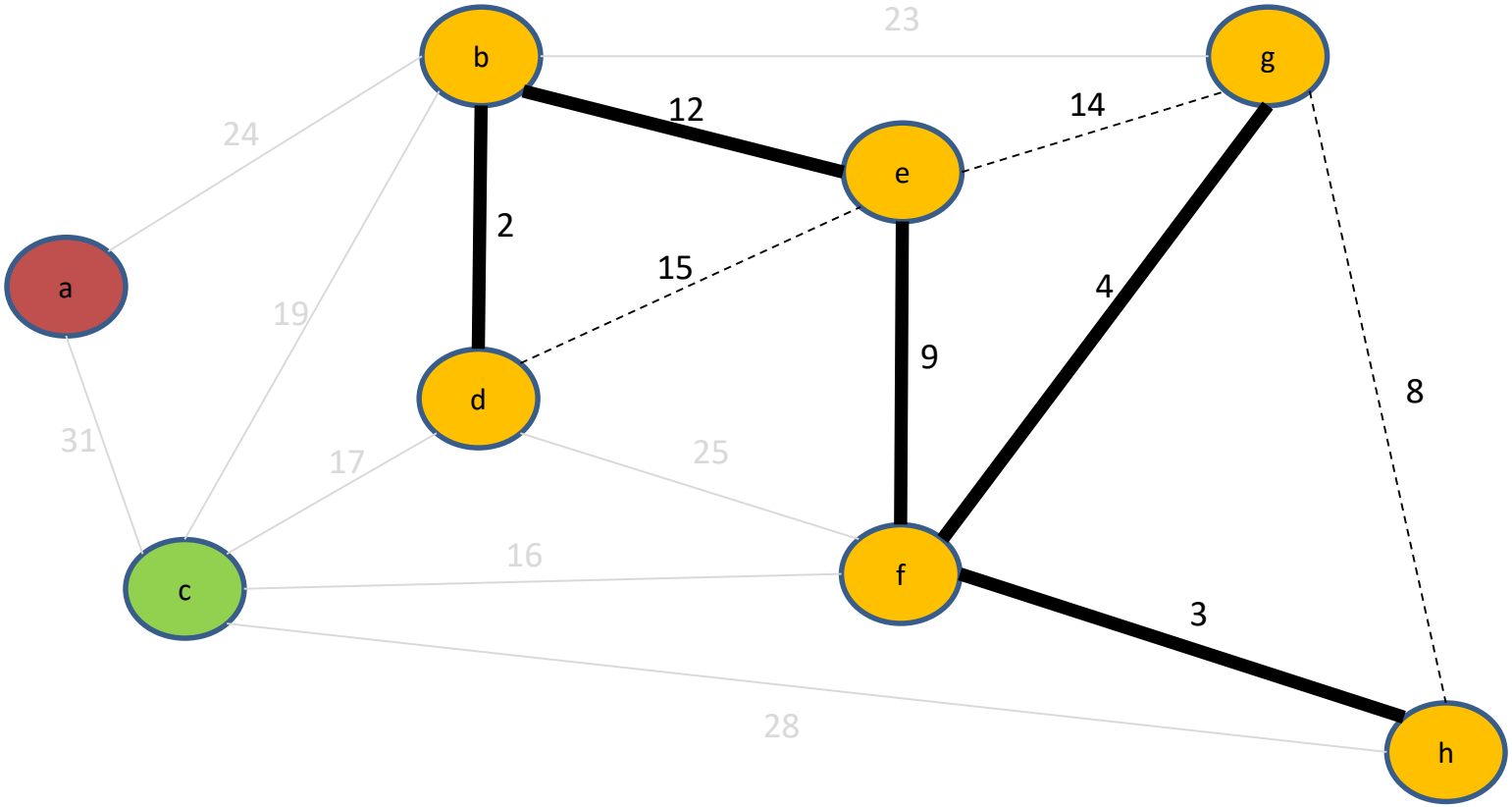

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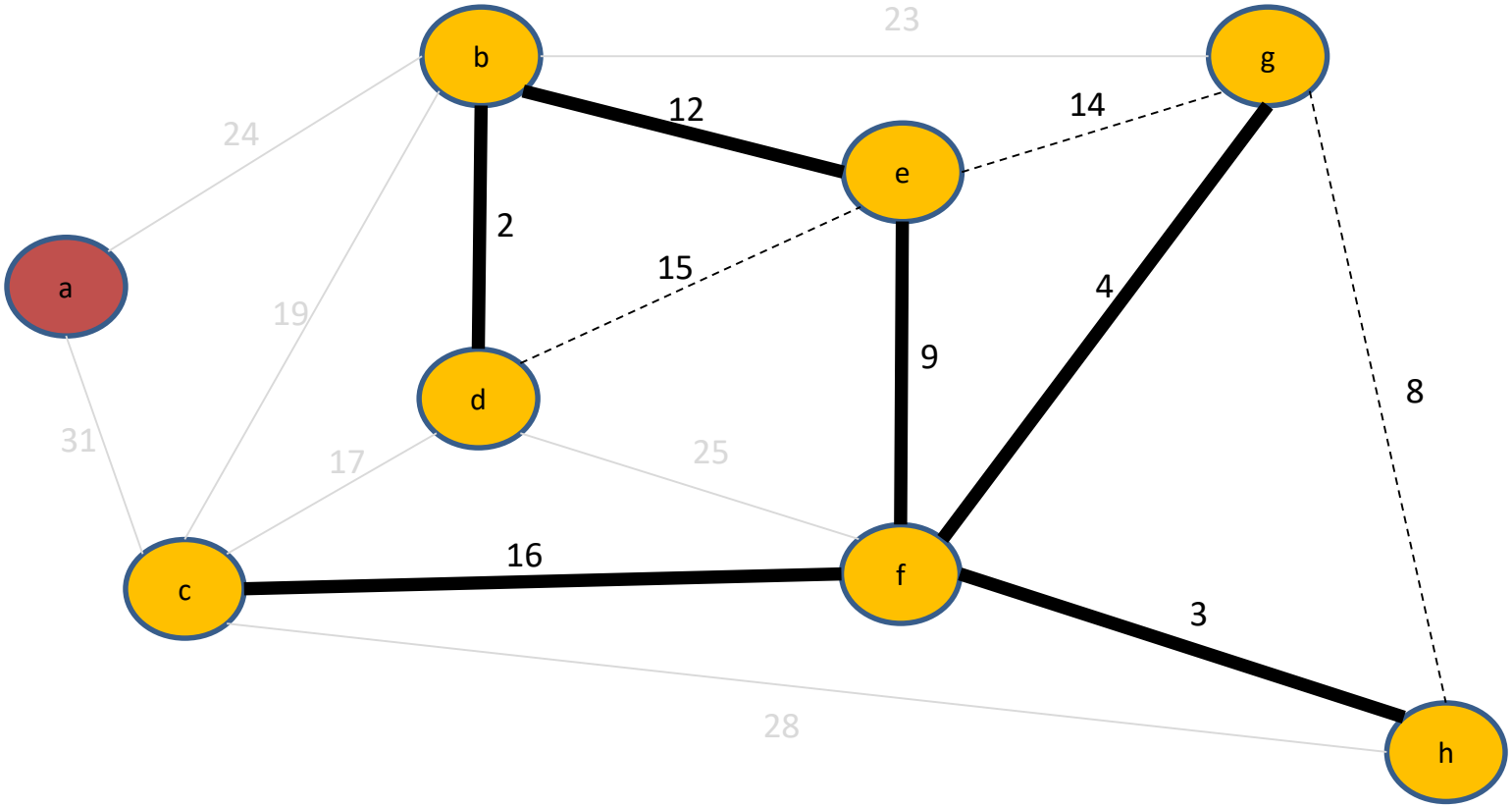

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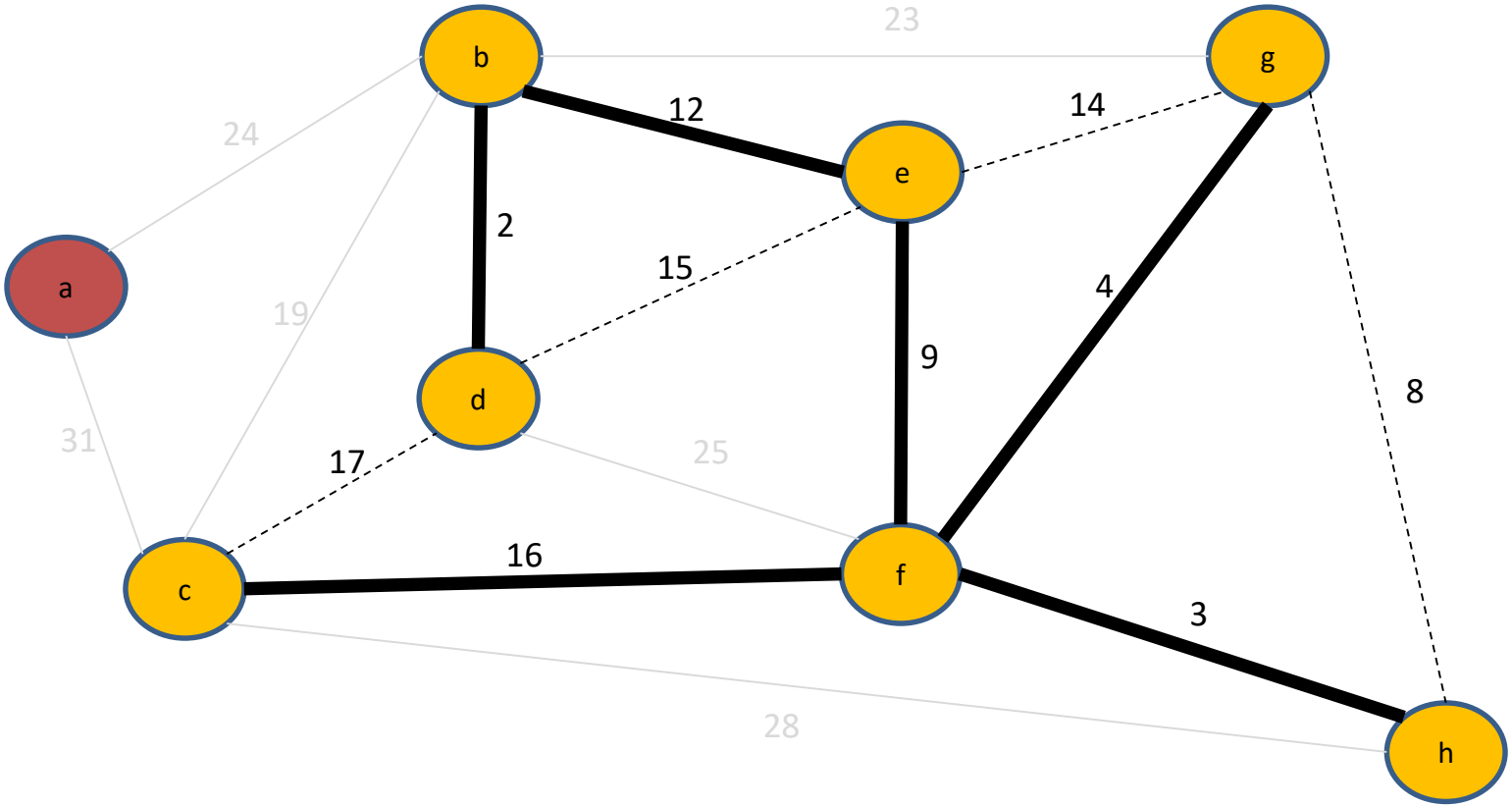

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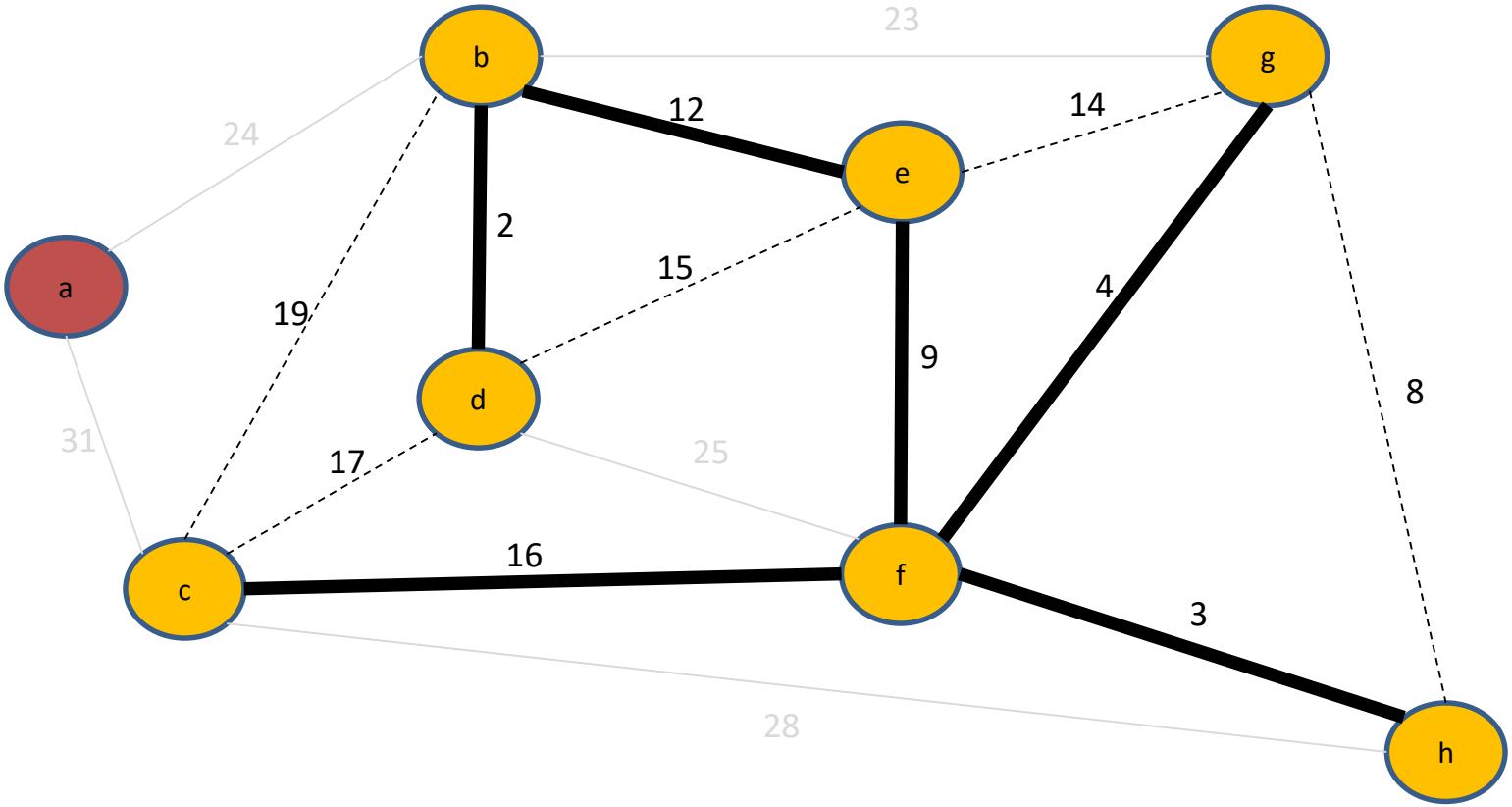

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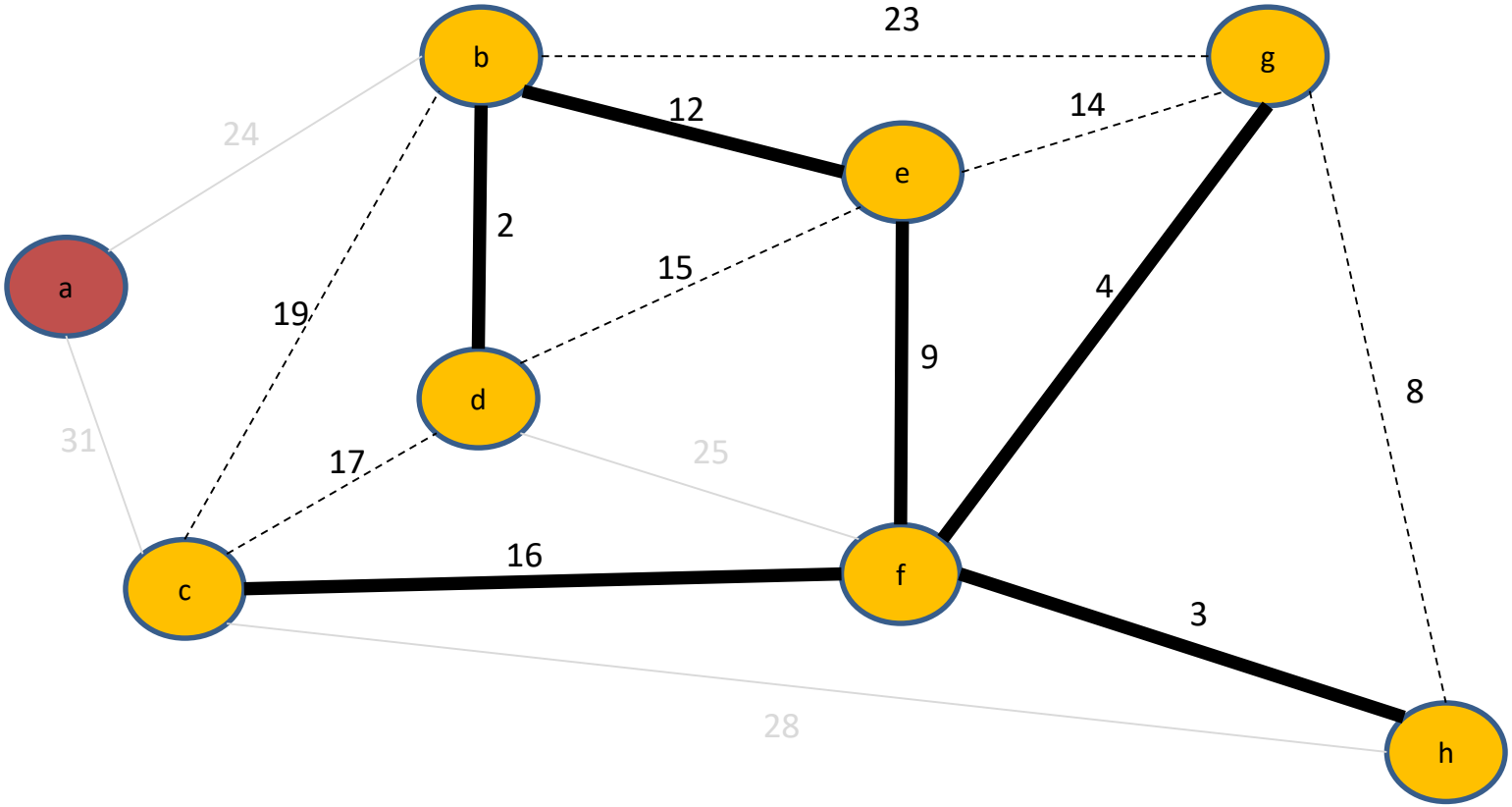

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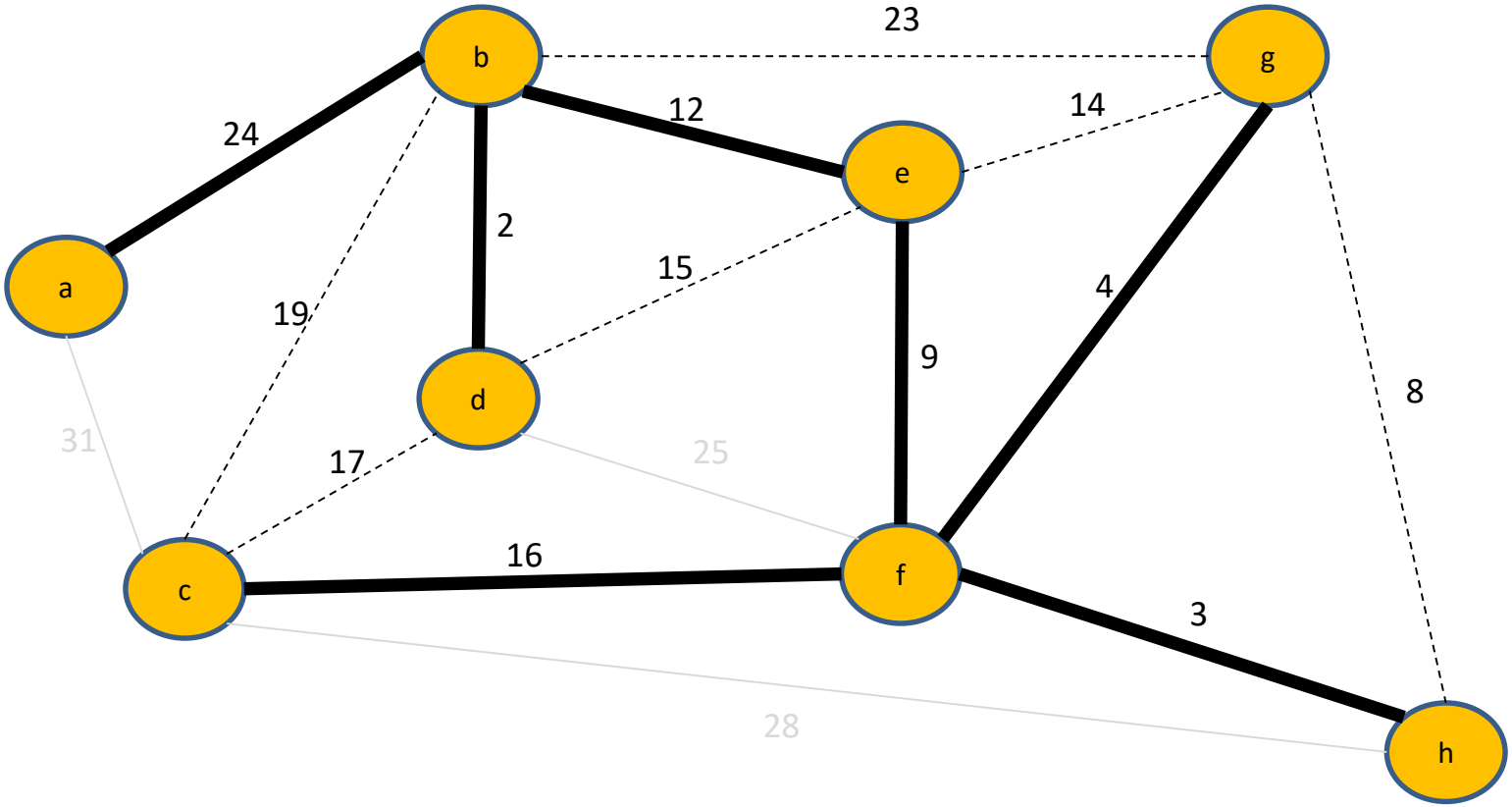

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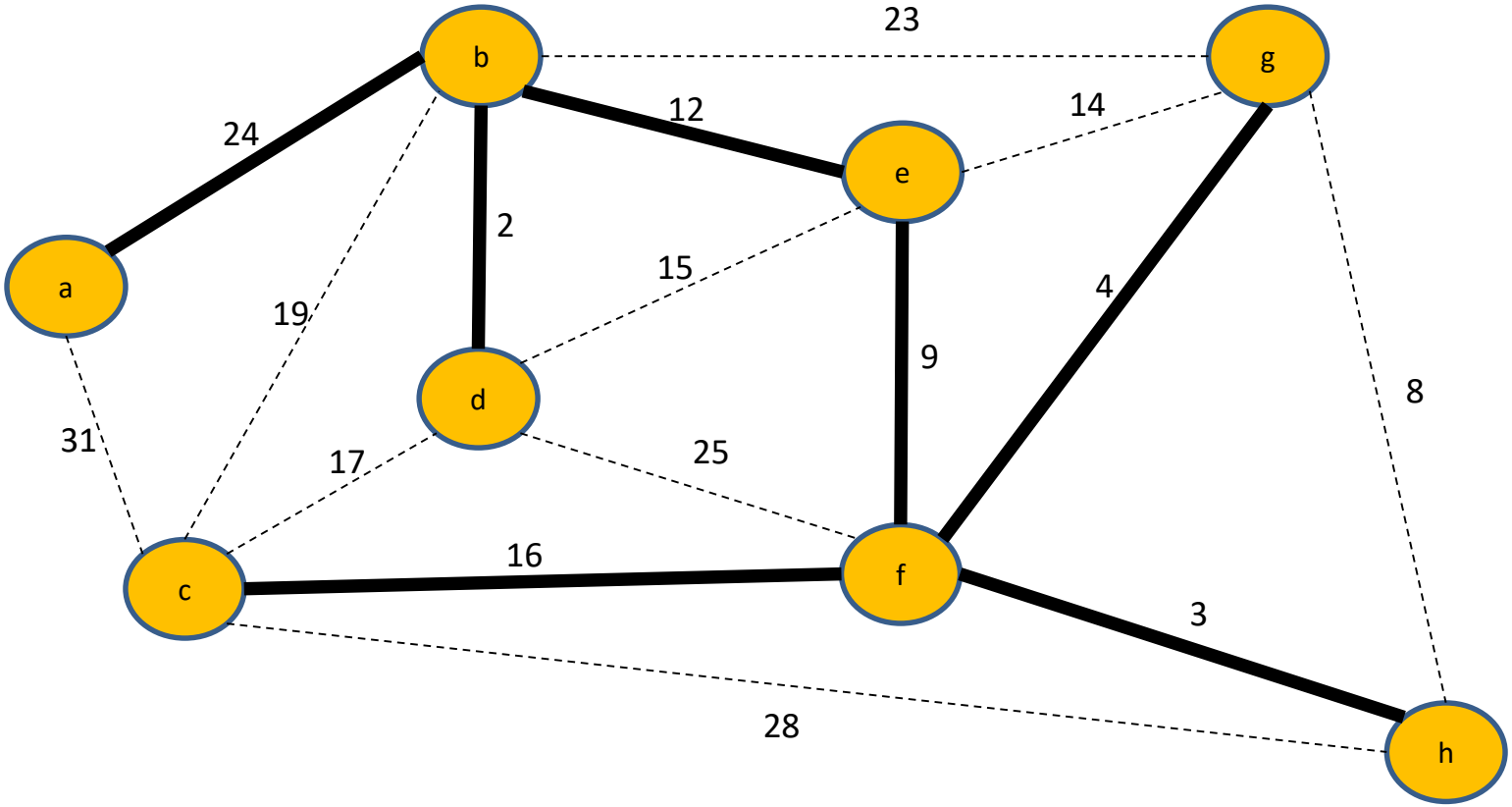

NALOGA

V Primovem algoritmu za gradnjo minimalnega vpetega drevesa prioritetno vrsto realiziramo z

a) urejenim seznamom
b) neurejenim seznamom
c) zgoščeno tabelo
d) AVL drevesom

Ocenite časovno zahtevnost vseh variant algoritma za gradnjo minimalnega vpetega drevesa v odvisnosti od števila vozlišč n in števila povezav m.

Primov algoritem: n operacij INSERT, n operacij DELETEMIN, m-(n-1) krat DECREASE_KEY (torej O(m) krat)

Prior. vrsta	INSERT	DELETEMIN	DECREASE_KEY	SKUPAJ
Ur. seznam	O(n)	O(1)	O(n)	O(n*O(n) + n*O(1) + m*O(n)) = O(n^2 + m*n)
Neur. seznam	O(1)	O(n)	O(1)	O(n*O(1) + n*O(n) + m*O(1)) = O(n^2 + m)
Zg. tabela	O(1)	O(n)	O(1)	O(n*O(1)+n*O(n) + m*O(1)) = O(n^2 + m)
AVL	O(log n)	O(log n)	O(log n)	O(n*O(log n) + n*O(log n) + m*O(log n)) = O(m*log n), m >= n-1