

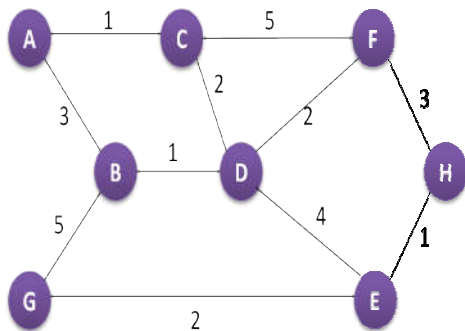
Disciplina: Análise de Algoritmos

Exercícios: Algoritmos para Grafos

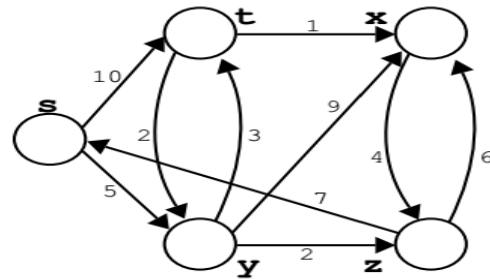
Para cada exercício definir a complexidade do algoritmo.

1. Obter o caminho mínimo usando o algoritmo de *Dijkstra*, tendo como vértice inicial

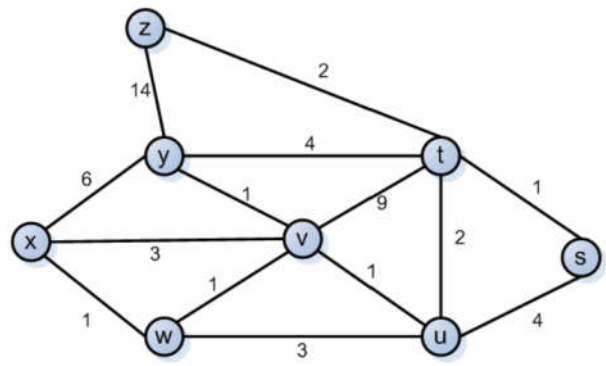
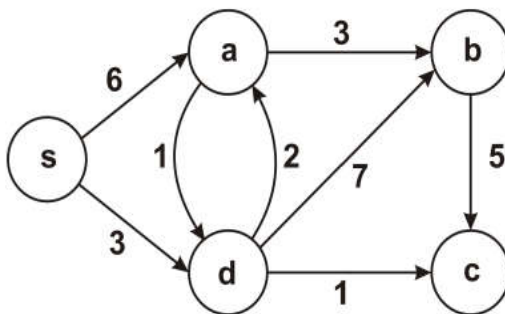
a) o vértice A



b) Vértice S



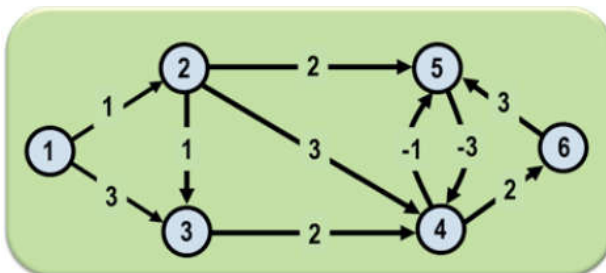
c) Vértice S



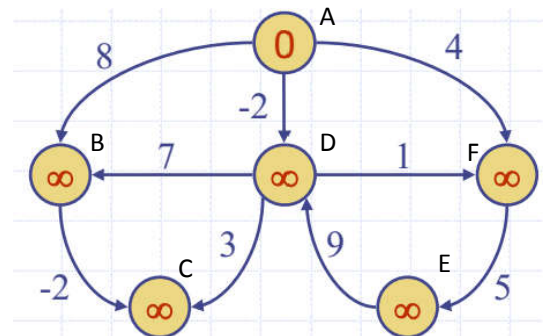
d) Vértice x

2. Execute o algoritmo de Bellman-Ford para o grafo abaixo.

a)

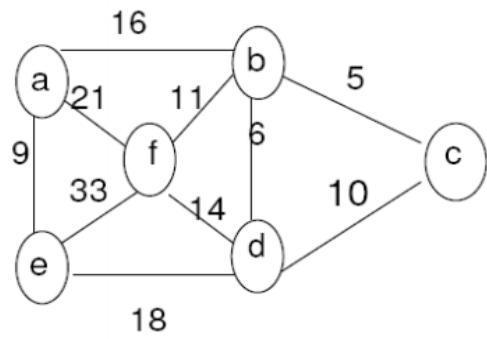


b)

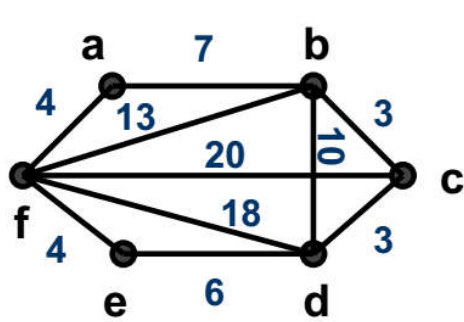


4. Obter a árvore geradora Mínima usando Kruskal

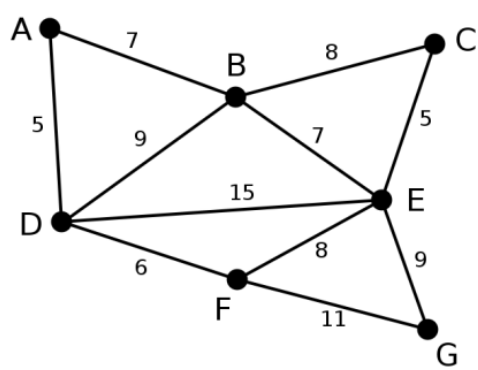
a)



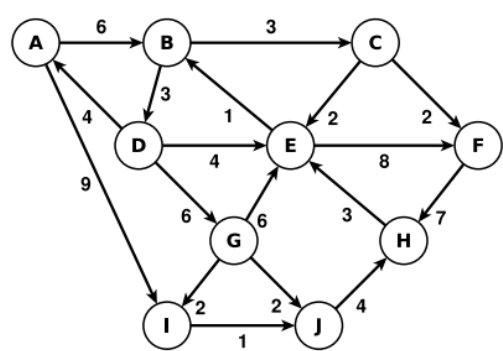
b)



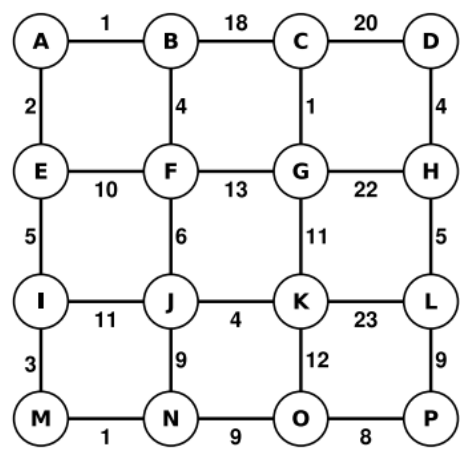
c)



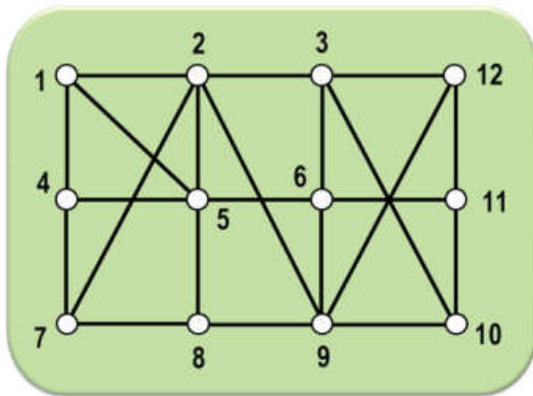
d)



e)



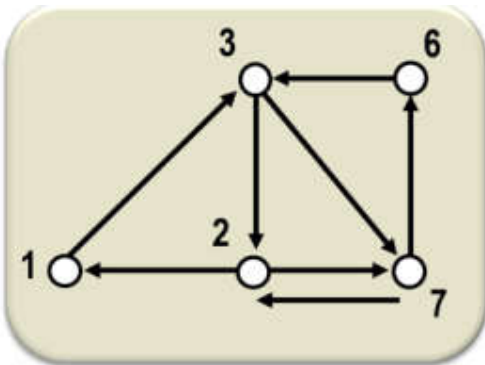
5. Para o grafo da figura abaixo



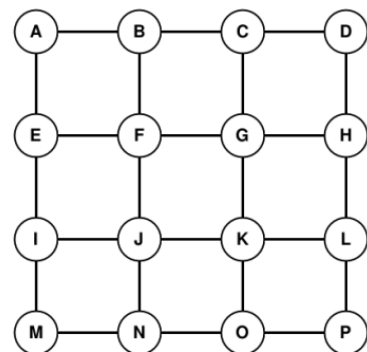
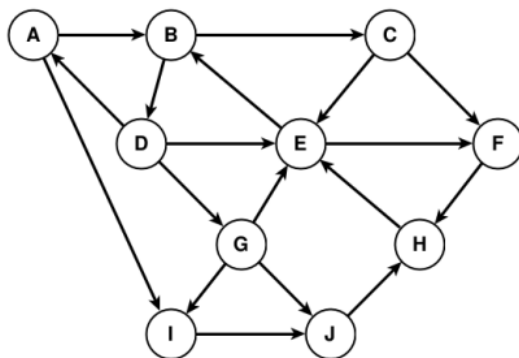
a) Apresente a sequência de vértices após a busca em profundidade

b) Apresente a sequência de vértices após a busca em largura.

6. Para o grafo da figura abaixo, apresente a sequência de vértices após a aplicação da Busca em Profundidade a partir do vértice 7.



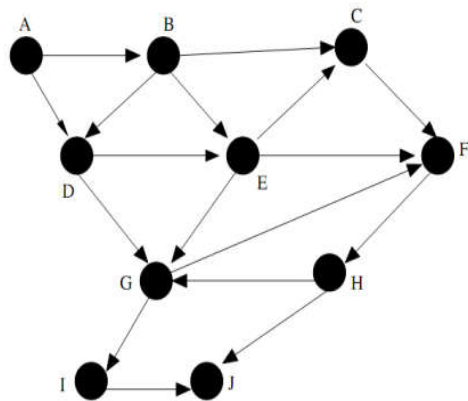
7. Para os seguintes Grafos



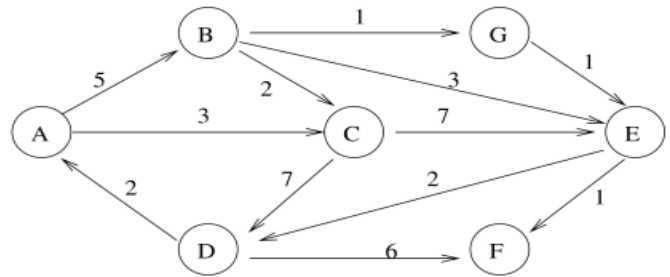
- a) Mostre a ordem de vértices visitados pelo algoritmo da busca em profundidade.
- b) Mostre a ordem de vértices visitados pelo algoritmo da busca em largura.

8. Forneça a ordem topológica dos grafos.

a)

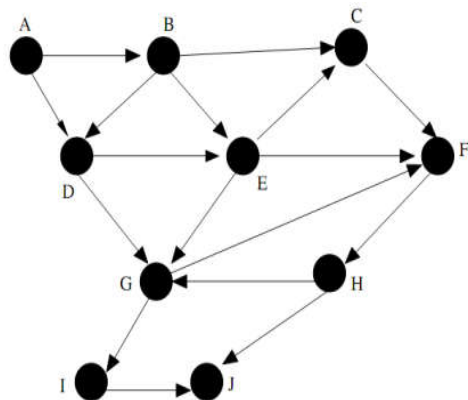


b)

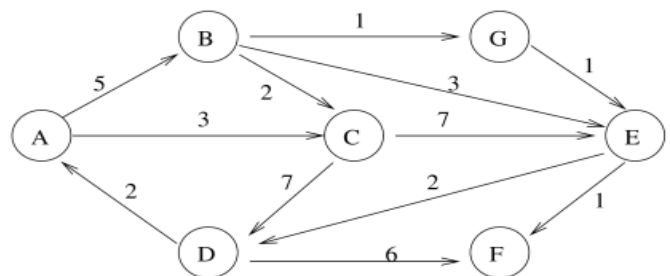


9. Forneça os Componentes fortemente conectados dos grafos

a)



b)



Referencias

[http://wiki.icmc.usp.br/index.php/SCC-503\(Moacir\)#Listas_de_Exerc.C3.ADcios](http://wiki.icmc.usp.br/index.php/SCC-503(Moacir)#Listas_de_Exerc.C3.ADcios)

<http://wiki.icmc.usp.br/images/4/41/SCC0603022016GrafosExercicios.pdf>

http://www.decom.ufop.br/marco/site_media/uploads/pcc173/listex02.pdf

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