1.

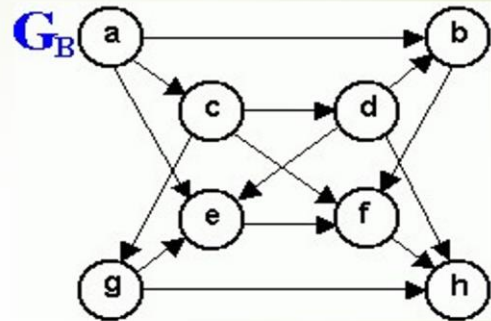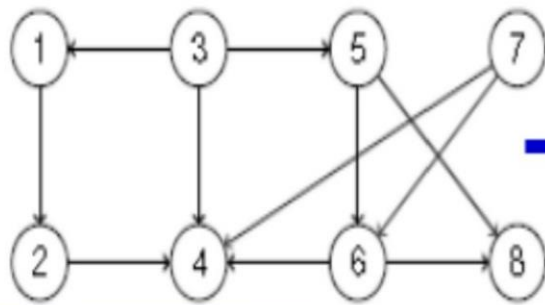### In-class discussions

(a) (b)

List the order in which the nodes of the directed graphs (a) and GB(b) are visited by topological order traversal that starts from vertex a.
1. Use DFS-based algorithm
2. Use Source Removal algorithm.

2.

In-class exercises

31 Multiply 14 by 850 by means of the Russian Peasant Multiplication algorithm

Ivanov the Russian Peasant likes to do things by threes instead of by twos. He multiplies 31*42 like this.

Describe his method. Try it for other problems, starting with 30*42. Does it appear to be sound? Can this type of Russian Peasant Multiplication be used to convert base ten numbers to base three? Give reasons

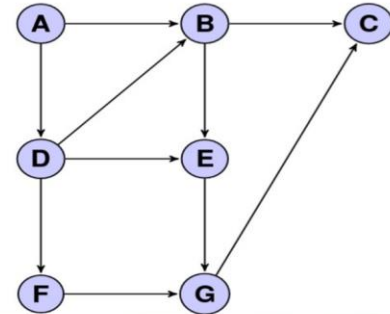|	
31	42
10	126
~~3~~	~~378~~
1	1134
	1302

3.

In-class discussions

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3 If the array A contains the items 10, 4, 7, 23, 67, 12 and 5 in that order, what will be the resultant array A after third pass of insertion sort?

4 Suppose you have the following list of numbers to sort : [150, 50, 40, 180, 120, 190, 140, 100, 80, 200] **Give the first three complete passes using insertion sort on this list**

5   . For the graph shown here, find a topological sorting ordering and draw the accompanying graph

Adapted from: A. Levitin "Introduction to the Design & Analysis of Algorithms," 3rd ed., Ch. 2 ©2012 Pearson Education, Inc., Upper Saddle River, NJ.