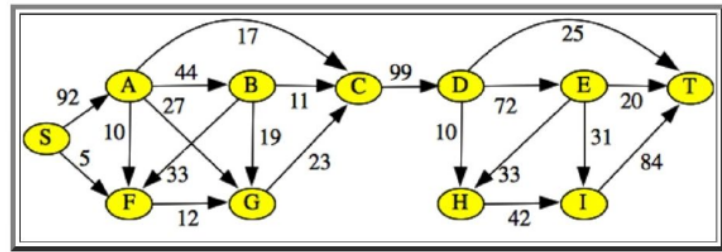


Suppose you are determining the maximum flow through the graph to the right. Tell me your first augmenting path using each of the following path determination algorithms:

- **Question 1:** Greedy DFS
- **Question 2:** Modified Dijkstra
- **Question 3:** Edmonds-Karp



The maximum flow through this graph is 51. You've asked your friend Skippy to tell you what the minimum cut of this graph is. Below are four potential answers that Skippy gives you. For each of these answers, tell me whether the answer is correct or not. If incorrect, tell me why.

**Question 4:** 51

**Question 5:** CD

**Question 6:** AC, BC, GC

**Question 7:** ET EI

**Question 8:** You are given a directed graph with a starting node *s* and an ending node *t*. All nodes are reachable from *s*, and there are no edges from *t* to any other node in the graph. Your job is to tell me how many distinct paths there are from *s* to *t*. If there are an infinite number of paths, return negative one.

I want you to tell me the steps that you would take to solve this problem in terms of an algorithm or multiple algorithms that you have learned in this class. Be precise about how you are using the algorithm/s. Tell me the running time. You may use *V* for the number of vertices, and *E* for the number of edges.

There are two examples to the right.

	<p>7 paths: sBDt, sBEt, sBFt, sBFEt, SCEt, SCFt, SCFEt</p>
	<p>Infinite paths -- return -1.</p>

