

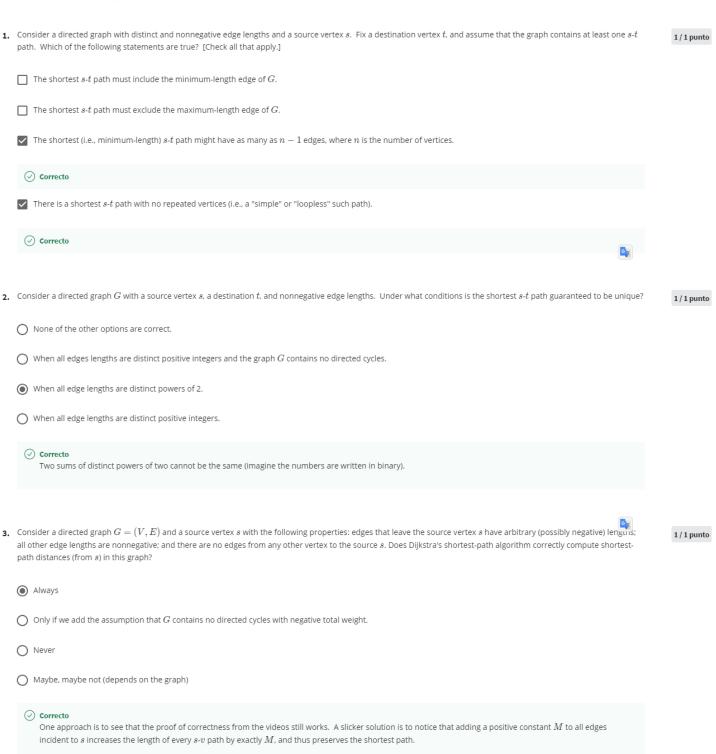
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Calificación recibida 100 % Para Aprobar 80 % o más

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Problem Set #2

Calificación de la entrega más reciente: 100 %



4. Consider a directed graph G and a source vertex s. Suppose G has some negative edge lengths but no negative cycles, meaning G does not have a directed cycle in which the sum of the edge lengths is negative. Suppose you run Dijkstra's algorithm on G (with source s). Which of the following statements are true? [Check all that apply.]

1 / 1 punto

	Dijkstra's algorithm might loop forever.	
	ightharpoonup Dijkstra's algorithm always terminates, and in some cases the paths it computes will be the correct shortest paths from s to all other vertices.	
	It's impossible to run Dijkstra's algorithm on a graph with negative edge lengths.	
	\checkmark Dijkstra's algorithm always terminates, but in some cases the paths it computes will not be the shortest paths from s to all other vertices.	
	Correcto Nonnegativity of the edge lengths was used in the correctness proof for Dijkstra's algorithm; with negative edge lengths, the algorithm is no longer correct in general.	
5.	Consider a directed graph G and a source vertex s . Suppose G contains a negative cycle (a directed cycle in which the sum of the edge lengths is negative) and also a path from s to this cycle. Suppose you run Dijkstra's algorithm on G (with source s). Which of the following statements are true? [Check all that apply.]	1/1 punto
	Dijkstra's algorithm might loop forever.	
	ightharpoonup Dijkstra's algorithm always terminates, but in some cases the paths it computes will not be the shortest paths from s to all other vertices.	
	It's impossible to run Dijkstra's algorithm on a graph with a negative cycle.	
	\square Dijkstra's algorithm always terminates, and in some cases the paths it computes will be the correct shortest paths from s to all other vertices.	