Polytechnic University of Puerto Rico

Electrical and Computer Engineering & Computer Science Department COE 4330, Section 80 – Computer Networks

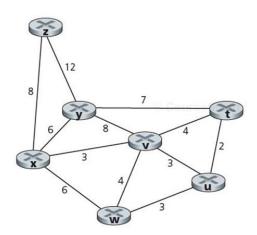
Homework 6

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Completely answer the following question.

1. Consider the network shown in the figure below. With the indicated link costs, use Dijkstra's shortest-path algorithm to compute the shortest path from **node v** to all network nodes. Show how the algorithm works by presenting your results in the table provided. (*10 points*)



Step	N'	D(u), p(u)	$\mathbf{D}(v), \mathbf{p}(v)$	D(w), p(w)	$\mathbf{D}(x),\mathbf{p}(x)$	$\mathbf{D}(y), \mathbf{p}(y)$	$\mathbf{D}(z),\mathbf{p}(z)$
0	ν	∞	0	∞	∞	∞	∞
1	v, w	4, v	0	3, v	∞	8, v	∞
2	v, w, u	4, v	0	3, v	7, w	8, v	∞
3	v, w, u, x	4, v	0	3, v	7, w	6, u	∞
4	v, w, u, x, y	4, v	0	3, v	7, w	6, u	8
5	v, w, u, x, y, z	4, v	0	3, v	7, w	6, u	14, y
6	v, w, u, x, y, z	4, v	0	3, v	7, w	6, u	14, y