Dijkstra's algorithm

Answers

Further Maths topic practice

This topic online

Q	Answer	Marks
1	ACBDF, length 17	5
2	**a)** SADT **b)** 31 minutes	6
3	**a)** ABDEG; 21 minutes **b)** Some arcs are one-way, for example BE and DF, so they cannot be travelled from G towards A and the return route may use different arcs.	7
4	**a)** ADGH; 33 km **b)** 23.4 seconds	8
5	**a)** D 16, A 17, F 27, B 28, E 30, G 40, H 48 **b)** ACDEGH; 65 miles **c)** 3 miles	8
6	ACDFG, 67 km	6
7	**a)** SBET; 22 minutes **b)** SCFT; 24 minutes **c)** 2 minutes	9
8	**a)** ABDFH; 84 seconds **b)** ACEGH; 88 seconds **c)** 4 seconds	9
9	**a)** 29 **b)** ABDFG and ACFG	7
10	**a)** ACDFG; 28 km **b)** $0 < x < 17$	8
11	**a)** B 9, C 12, A 14, E 22, F 23, D 25, J 28, G 31 **b)** HBEJ; 28 minutes **c)** No: the quickest time to G is 31 minutes, more than 30 **d)** Once every vertex is labelled, each final value is the shortest distance from H to that vertex, so all the villages are answered at once.	9
12	**a)** DBFJK; 49 miles **b)** DBFE; 31 miles **c)** DBFEHK; 53 miles **d)** 4 miles	10

Full worked solutions, written out by hand, are on the solutions sheet for this topic.

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