Decision Mathematics 1

Pearson Edexcel · International A-Level · Further Mathematics · Vocabulary in context

Word	Example
bubble sort /ˈbʌbl sɔːt/	**Bubble sort** swaps two items next to each other if they are in the wrong order.
quick sort /kwɪk sɔːt/	**Quick sort** picks a pivot and splits the list around it.
bin packing /bɪn ˈpækɪŋ/	**Bin packing** fits items into as few bins as possible.
minimum spanning tree /ˈmɪnɪməm ˈspænɪŋ triː/	A **minimum spanning tree** joins all vertices with the least total length.
Kruskal's algorithm /ˈkrʌsklz ˈælgərɪθəm/	**Kruskal's algorithm** adds the shortest edges first, avoiding cycles.
Prim's algorithm /prɪmz ˈælgərɪθəm/	**Prim's algorithm** grows a tree one nearest vertex at a time.
Dijkstra's algorithm /ˈdeɪkstrəz ˈælgərɪθəm/	**Dijkstra's algorithm** finds the shortest path in a network.
route inspection (Chinese postman) problem /ruːt ɪnˈspekʃn ˈprɒbləm/	The **route inspection (Chinese postman) problem** finds the shortest route along every edge.
classical travelling salesman problem /ˈklæsɪkl ˈtrævəlɪŋ ˈseɪlzmən ˈprɒbləm/	In the **classical travelling salesman problem**, you visit each city exactly once.
nearest neighbour algorithm /ˈnɪərɪst ˈneɪbə ˈælgərɪθəm/	The **nearest neighbour algorithm** always goes to the closest unvisited city.

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activity-on-arc network /ækˈtɪvɪti ɒn ɑːk ˈnetwɜːk/	In an **activity-on-arc network**, each arc is one task.
dummy /ˈdʌmi/	A **dummy** activity shows an order between tasks but takes no time.
earliest event times /ˈɜːlɪst ɪˈvent taɪmz/	**Earliest event times** are found by working forwards through the network.
latest event times /ˈleɪtɪst ɪˈvent taɪmz/	**Latest event times** are found by working backwards.
total float /ˈtəʊtl fləʊt/	A task with five days of **total float** can be late by five days.
critical path /ˈkrɪtɪkl pæθ/	A delay on the **critical path** delays the whole project.
Gantt chart /gænt tʃɑːt/	A **Gantt chart** shows when each activity starts and finishes.
ruler method /ˈruːlə ˈmeθəd/	The **ruler method** slides a line across the graph to find the best point.
• **vertex method** /ˈvɜːteks ˈmeθəd/	The **vertex method** checks the value at each corner of the region.