Use algorithms to build graph subsets satisfying conditions and solve associated problems

Key skills | Free preview

Learning target: Use algorithms to build graph subsets satisfying conditions and solve associated problems.

A graph model should explain what each vertex and edge represents and which features of the situation are ignored. An algorithm must then operate on that representation. A breadth-first search grows a distance-layered set, while a spanning tree retains connectedness with no redundant cycle.

Try the mathematics

Task 1. Five rooms A,B,C,D,E have corridors AB,AC,BD,CD,DE. Model the rooms and corridors. Find the smallest number of corridors needed to travel from A to E, and list a shortest route.

Continue with the full worksheet

The complete resource has 2 focused task sets and substantive worked solutions. Use an exercise book or print the A4 worksheet. This preview shows the first task without its full solution.

Find this resource: https://resources.aspiretopowerlearning.com.au/vce/skills/sm-u1-o1-ks-09/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Specialist Mathematics; Unit 1; Outcome 1; Key skills; bullet 9; p. 62.

The learning target is a concise paraphrase. Aspire reference: sm-u1-o1-ks-09. This is an internal identifier, not an official VCAA code.

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