



QUESTION WORKBOOK

Critical path analysis

Decision Mathematics 1 · Year FM

6 questions · 22 marks

NAVY SCREEN EDITION

SECTION A · Warm-up

A1 Explain what a dummy activity is and give one reason it is needed. [2]

A2 A project has A (3 days, no predecessors), B (5, none), C (4, after A), D (2, after A), E (6, after B and C), F (3, after D) and G (2, after E and F). Carry out the forward pass. [3]

SECTION B · Standard

B1 Carry out the backward pass for the same project and state the critical path. [4]

- B2** Explain why the critical path is not simply the route with the most activities on it, using this project as an example. [3]

- B3** An activity has earliest start 6, duration 4 and latest finish 13. Is it critical? [3]

SECTION C · Stretch

- C1** A project has A (3 days, no predecessors), B (5, none), C (4, after A), D (2, after A), E (6, after B and C), F (3, after D) and G (2, after E and F); it takes 15 days along the critical path A, C, E, G. Activity B is found to take 8 days rather than 5. Find the new project duration and the new critical path. Hence find the greatest duration B could have without displacing the original critical path. [7]