



South Australian  
Certificate of Education

# General Mathematics

## 2022

### Question booklet

- Questions 1 to 9 (90 marks)
- Answer **all** questions
- Write your answers in this question booklet
- You may write on page 21 if you need more space

### Examination information

#### Materials

- Question booklet
- SACE registration number label

#### Instructions

- Show appropriate working and steps of logic in this question booklet
- Use black or blue pen
- You may use a sharp dark pencil for diagrams and graphical representations
- Approved calculators may be used — complete the box below

**Total time:** 130 minutes

**Total marks:** 90

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Attach your SACE registration number label here

#### Graphics calculator

1. Brand \_\_\_\_\_

Model \_\_\_\_\_

2. Brand \_\_\_\_\_

Model \_\_\_\_\_



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- (d) (i) Apply the Hungarian algorithm to the array from page 8, given below, to minimise the total time spent on these weekly chores. Show the result of each step clearly.

23	17	20	16
27	21	24	16
25	19	21	18
25	18	22	15

(5 marks)

- (ii) Fill in the spaces below to complete the interpretation of your solution in part (d)(i).

	<i>Weekly chore</i>
Kelly	
Paula	
Bobby	
Joe	

Minimum total time	
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(2 marks)











(c) Which option below correctly identifies the critical path and minimum completion time for this project? Tick the appropriate box to indicate your answer.

	<i>Critical path</i>	<i>Minimum completion time</i>
<input type="checkbox"/>	B, E, H, J	17 hours
<input type="checkbox"/>	B, D, H, J	16 hours
<input type="checkbox"/>	B, D, H, J	19 hours
<input type="checkbox"/>	B, E, H, J	19 hours

(1 mark)

(d) Which of the following statements are correct? Tick the appropriate box(es) to indicate your answer(s).

- Task J will always be on the critical path because it takes the shortest time to complete.
- Task A has no slack time.
- Task J will always be on the critical path because it is the only task leading to the end of the network.
- Dummy link Y takes more time to complete than dummy link X.
- A delay in the completion of task J will always increase the minimum completion time for the project.

(2 marks)













You may write on this page if you need more space to finish your answers. Make sure to label each answer carefully (e.g. 9(b)(ii) continued).







