



South Australian  
Certificate of Education

# Essential Mathematics

## 2022

### Question booklet

**Topic 2: Measurement** (Questions 1 to 3) 30 marks

**Topic 4: Statistics** (Questions 4 to 6) 30 marks

**Topic 5: Investments and loans** (Questions 7 to 9) 30 marks

- Answer **all** questions
- Write your answers in this question booklet
- You may write on pages 12 and 24 if you need more space
- Allow approximately 40 minutes for **each** topic

### 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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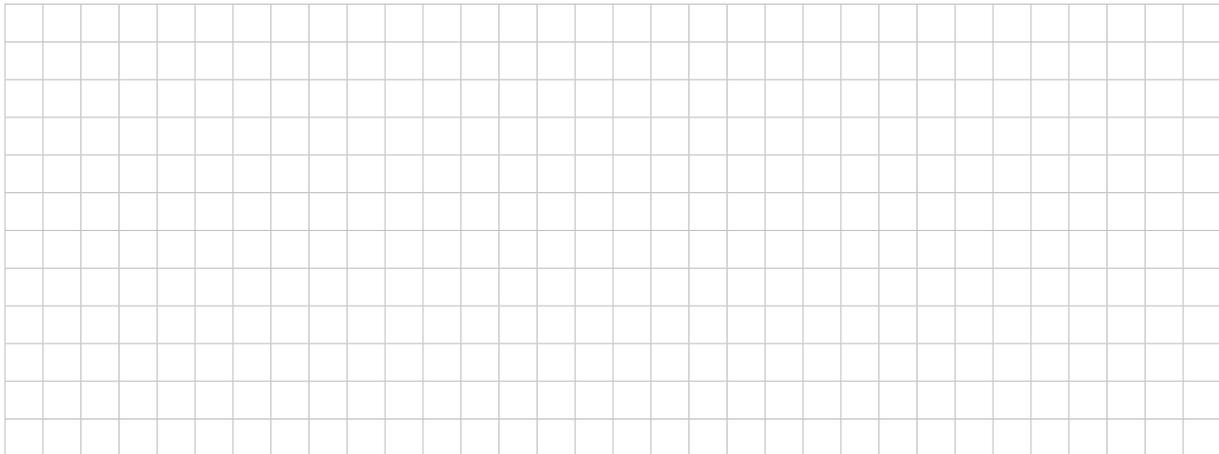
The following measurements are also known for Diagram 4.

Angle  $GHF = 44^\circ$

Angle  $GFH = 30^\circ$

(b) (i) On Diagram 4, write the values for angle  $GHF$  and angle  $GFH$ . (1 mark)

(ii) Show that the length of  $GH$  is approximately 0.73 km.

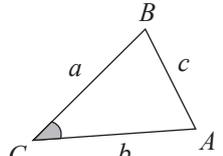


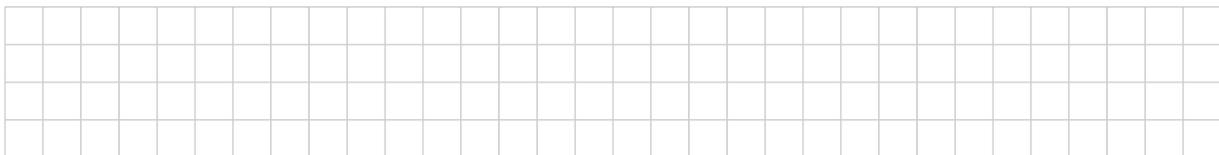
(3 marks)

(iii) Show that the area of triangle  $FGH$  is approximately  $0.35 \text{ km}^2$ .

Note:

Area of triangle  $ABC$ ,

$$\text{Area} = \frac{1}{2} ab \sin C$$




(1 mark)





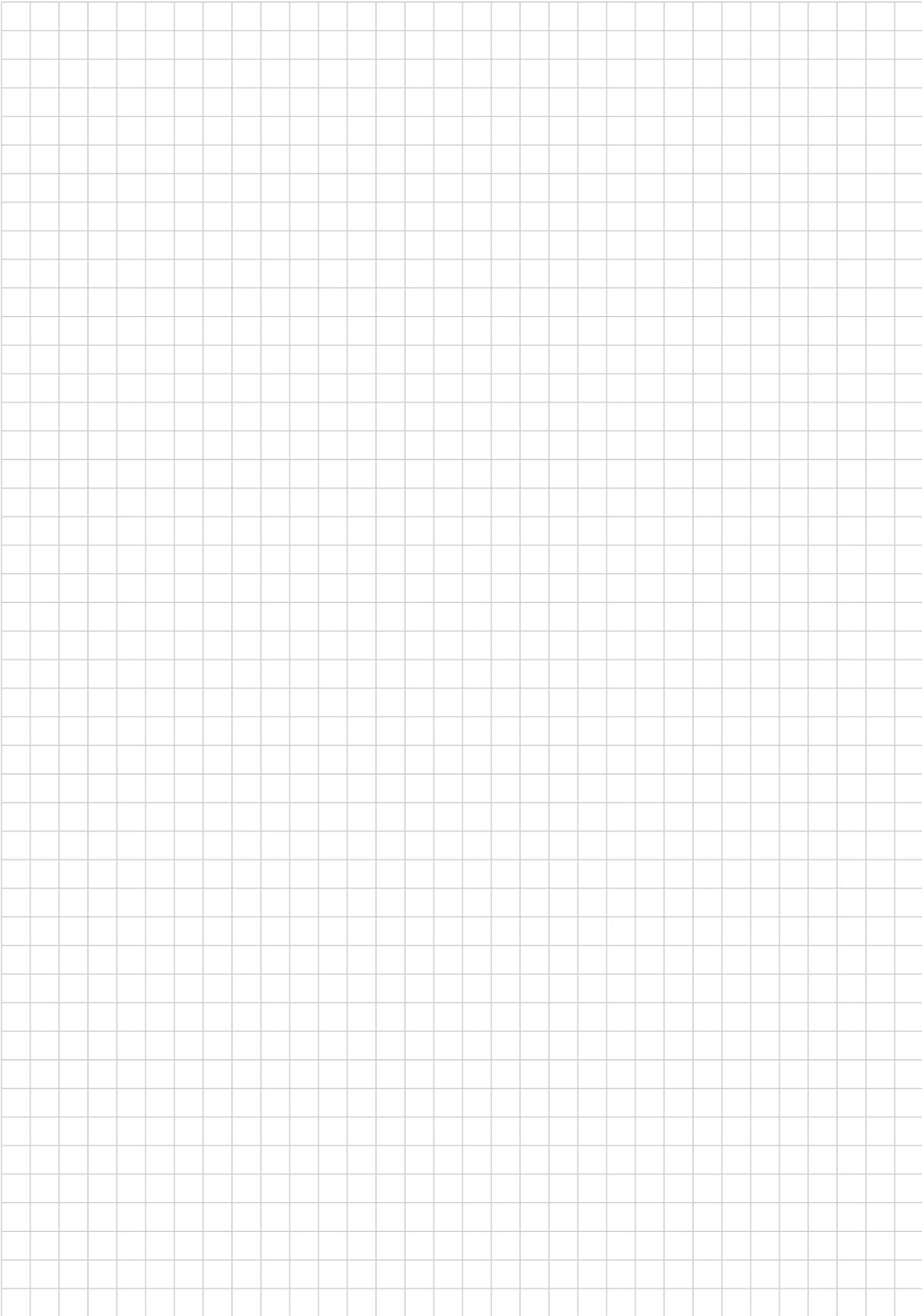








*You may write on this page if you need more space to finish your answers to any questions.  
Make sure to label each answer carefully (e.g. 3(c)(ii) continued).*



**Question 5** (15 marks)

A research group investigated the average amount of money (in dollars) spent on single takeaway food purchases for different age groups.

Table 1 shows the data for the amount of money (in dollars) spent on a single purchase by 12 individuals from the Gen Z age group who were aged 18 to 25 years.

**Table 1**

70	86	65	50	73	62	56	74	49	68	81	90
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(a) Using the data in Table 1, complete the **ordered** stem plot below for the Gen Z age group.

**Amount of money spent on a single takeaway food purchase (\$)**

Boomers (58 to 65 years)								Stem	Gen Z (18 to 25 years)							
							1	<b>3</b>								
			9	6	2	1	1	<b>4</b>								
						4	0	<b>5</b>								
					9	5	2	<b>6</b>								
								<b>7</b>								
								<b>8</b>								
							7	<b>9</b>								

**Key:** stem 3 leaf 1 = 31 (2 marks)

(b) The *three* statements below compare the data for the Boomers to the data for Gen Z. Circle the appropriate highlighted word to make each statement correct.

(i) The data for the Boomers are **less / more** symmetrical than the data for Gen Z. (1 mark)

(ii) The data for the Boomers have a **larger / smaller** range than the data for Gen Z. (1 mark)

(iii) One of the **Boomers / Gen Z** has spent the lowest amount on a single takeaway food purchase. (1 mark)





















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

