REACH ASSESSMENTS™ ICAS ASSESSMENTS™

PAPER H

PRACTICE QUESTIONS

Mathematics

DO NOT OPEN THIS BOOKLET UNTIL INSTRUCTED.

Read the instructions on the **ANSWER SHEET** and fill in your **NAME**, **SCHOOL** and **OTHER INFORMATION**.
Use a pencil. Do **NOT** use a coloured pencil or a pen.
Rub out any mistakes completely.

You **MUST** record your answers on the **ANSWER SHEET**.

Mark only **ONE** answer for each question.
Your score will be the number of correct answers.
Marks are **NOT** deducted for incorrect answers.

There are **5 MULTIPLE-CHOICE QUESTIONS** (1–5).
Use the information provided to choose the **BEST** answer from the four possible options.

On your **ANSWER SHEET** fill in the oval that matches your answer.

You may use a ruler and spare paper.
You are **NOT** allowed to use a calculator.

Note: Some UNSW Global assessments are only available online.

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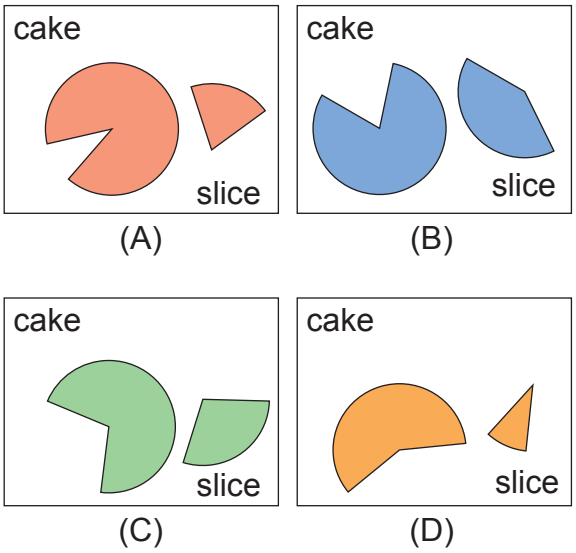
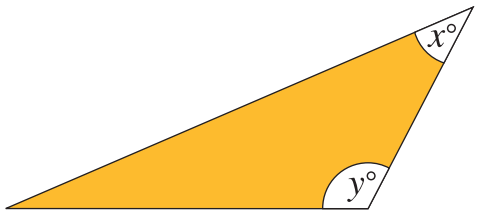
1. In which picture does the slice match the missing part of the cake?



2. This is a diagram of a triangle.



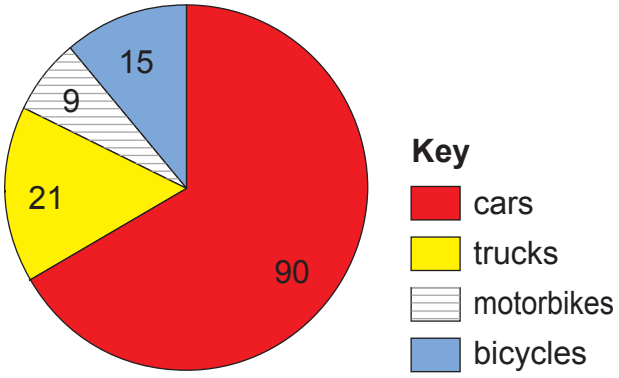
NOT TO SCALE

Which of these **cannot** be values for x and y ?

	x	y
(A)	70	120
(B)	50	120
(C)	70	100
(D)	50	100

3. This is a sector graph (pie graph).

Vehicles Passing the School



What is the angle at the centre for the number of cars passing this school?

(A) 296°
(B) 284°
(C) 257°
(D) 240°

4. In the toy car shown, the diameters of the back wheels are one-and-a-half times the diameters of the front wheels.

When the car travels one metre, the back wheels go around 6 times.

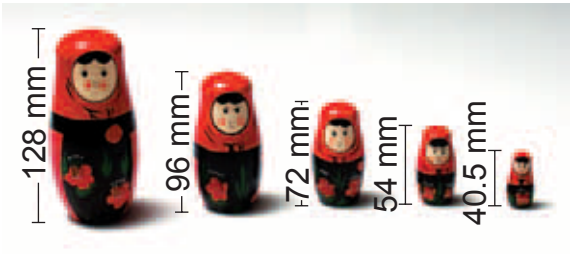
How many times do the front wheels go around when the car travels one metre?

(A) 4
(B) 6
(C) 9
(D) 12

QUESTION 5 IS FREE RESPONSE.

Write your answer in the boxes provided on the ANSWER SHEET and fill in the ovals that match your answer.

5.* Katya has a set of Russian dolls.
The heights of her dolls are shown.
They increase by a fixed ratio.



The smallest doll fits in the next larger doll.
They both fit inside the next doll.
The largest doll shown fits all four of the other dolls inside it.

Katya calculates the height of the doll that can fit exactly 700 dolls inside it, including the dolls shown.

She writes the answer as:

$$1.1603 \times 10^{x} \text{ mm}$$

What is the value of x?

* Free response questions are only applicable to some assessments.

END OF PAPER

THIS PAGE MAY BE USED FOR WORKING.

PAPER **H** **M**

REACH ASSESSMENTS™

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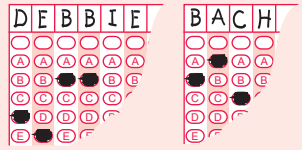
HOW TO FILL OUT THIS SHEET:

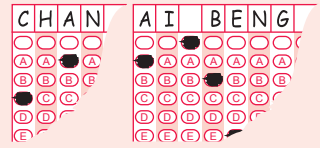
USE A PENCIL

- Print your details clearly in the boxes provided.
- Make sure you fill in only one oval in each column.
- Rub out all mistakes completely.
- Do not use a coloured pencil or pen.

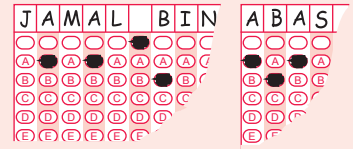
EXAMPLE 1: Debbie Bach



EXAMPLE 2: Chan Ai Beng



EXAMPLE 3: Jamal bin Abas



FIRST NAME to appear on certificate

LAST NAME to appear on certificate

Are you male or female? ○ Male ○ Female

Does anyone in your home usually speak a language other than English? ○ Yes ○ No

School name: _____

_____

Town / suburb: _____

Today's date: ____ / ____ / ____ **Postcode:** _____

DATE OF BIRTH

Day Month Year

STUDENT ID (optional)

CLASS (optional)

TO ANSWER THE QUESTIONS

MULTIPLE CHOICE

Questions 1 to 35

Example: 4 + 6 =

(A) 2
(B) 9
(C) 10
(D) 24

The answer is 10, so fill in the oval Ⓒ, as shown.

Ⓐ Ⓑ ● Ⓓ

USE A PENCIL
DO NOT USE A COLOURED PENCIL OR PEN

START

1 Ⓐ Ⓑ Ⓒ Ⓓ

2 Ⓐ Ⓑ Ⓒ Ⓓ

3 Ⓐ Ⓑ Ⓒ Ⓓ

4 Ⓐ Ⓑ Ⓒ Ⓓ

5

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

QUESTION	KEY	SOLUTION	STRAND	LEVEL OF DIFFICULTY
1	C	The missing part in C is one third which matches the slice (one third); altogether they complete one whole.	Space and Geometry	Easy
2	A	The sum of x and y adds to 190° which is more than the angle sum of a triangle (180°).	Space and Geometry	Easy
3	D	The total number of vehicles = 135 The angle at the centre for cars = $\frac{90}{135} \times 360°$ = 240°	Chance and Data	Medium
4	C	Let D be the diameter of the big wheel (back wheel). Let d be the diameter of the small wheel (front wheel). According to the question information, D = 3/2 × d. When the car travels 1 m, the big wheel makes 6 turns. Therefore, 6 × the circumference of the big wheel = 1 Circumference of the big wheel is πD, therefore the equation can be presented as: $6 \times \pi D = 1$….**(Equation 1)**. Let x be the number of turns the small wheel makes when the car travels 1m. Using the same logic, we can form the equation $x \times \pi d = 1$…. **(Equation 2)** Dividing Equation 1 by Equation 2: $\frac{6D}{xd} = 1$, make x the subject of the equation: $x = \frac{6D}{d}$ Substitute D= 3/2 d $x = \frac{6 \times 3}{2} = 9$ ·	Measurement	Medium

5	89	Height of smallest doll is 40.5mm. Rate of increase in height of successive dolls is $\frac{128}{96}$. Height of doll with 700 dolls inside $= 40.5 \times \left[\frac{128}{96}\right]^{700}$ $= 1.1603 \times 10^{89}$ mm Therefore, the value of x is 89.	Number and Arithmetic	Hard

Level of difficulty refers to the expected level of difficulty for the question.

Easy	more than 70% of candidates will choose the correct option
Medium	about 50–70% of candidates will choose the correct option
Medium/Hard	about 30–50% of candidates will choose the correct option
Hard	less than 30% of candidates will choose the correct option

THE FOLLOWING YEAR LEVELS SHOULD SIT THIS PAPER	
Australia[1]	Year 10
Brunei	Form 5
Egypt	Year 10
Hong Kong	Form 4
Indian Subcontinent[2]	Class 10
Indonesia	Year 11
Malaysia	Form 4
Middle East[3]	Class 10
New Zealand/ Pacific[4]	Year 11
Singapore	Secondary 3
Southern Africa[5]	Grade 10

1 All international schools registered with UNSW Global (which have an 8-digit school code starting with 46) should sit the papers according to the Australian year levels.
2 Indian Subcontinent Region: India, Sri Lanka, Nepal, Bhutan and Bangladesh.
3 Middle East Region: United Arab Emirates, Qatar, Kuwait, Saudi Arabia, Bahrain, Oman, Turkey, Lebanon, Tunisia, Morocco, Libya, Algeria, Jordan and Pakistan.
4 Pacific Region: Vanuatu, Papua New Guinea and Fiji.
5 Southern Africa Region: South Africa, Botswana, Lesotho, Swaziland, Zimbabwe and Namibia.

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