

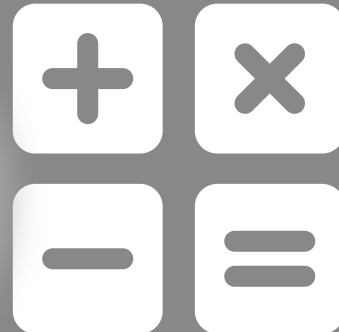


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PAPER  
G

Practice  
Questions



ICAS International  
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**DO NOT OPEN THIS BOOKLET UNTIL INSTRUCTED.**

**STUDENT'S NAME:**

Read the instructions on the **ANSWER SHEET** and fill in your **NAME, SCHOOL** and **OTHER INFORMATION**.

Use a 2B or B pencil.

Do **NOT** use a pen.

Rub out any mistakes completely.

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

MATHEMATICS

Mark only **ONE** answer for each question.

Your score will be the number of correct answers.

Marks are **NOT** deducted for incorrect answers.

**MULTIPLE-CHOICE QUESTIONS:**

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.

**FREE-RESPONSE QUESTIONS:**

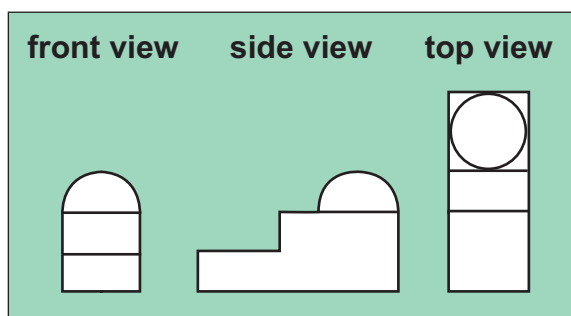
Write your answer in the boxes provided on the **ANSWER SHEET** and fill in the oval that matches your answer.

Educational  
Assessment

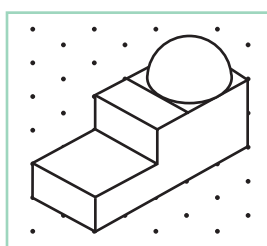
You may use a ruler and spare paper.

A **CALCULATOR** is required.

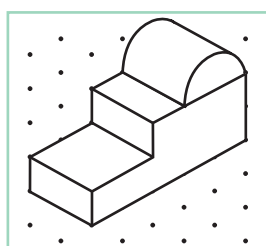
1. The plans for a new school hall are on display. These plans show a front view, a side view and a top view of the hall.



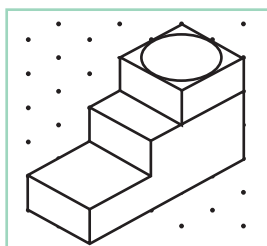
Which of the diagrams shows a correct three-dimensional view of the new hall?



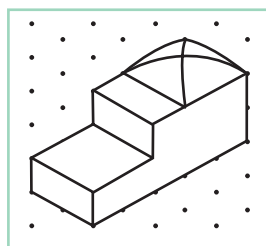
(A)



(B)

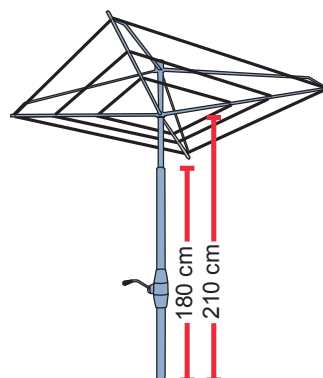


(C)



(D)

2. A rotary clothes line is fixed to the ground at its lowest level and can be raised when it is at its highest.



When the handle is given one full turn, the height of the clothes line increases by 30 mm.

How many full turns of the handle will it take to raise the clothes line from its lowest to its highest level?

- (A) 10  
(B) 30  
(C) 100  
(D) 300

3. Henry made a pattern with blocks, as shown.

Stage	Picture
1	
2	
3	
4	

In Stage 2 Henry used a total of five blocks.

How many blocks does Henry need for Stage 5?

- (A) 16  
(B) 17

4. Sandra has these pictures on her website.



Picture 1 uses 7.25 Kb of memory.



Picture 2 uses 3.323 Kb of memory.

Approximately how much memory does Picture 2 use as a percentage of the memory used by Picture 1?

- (A) 54%
- (B) 46%
- (C) 43%
- (D) 39%

QUESTION 5 IS FREE TO USE.

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

5. Lin cut this square picture out of a magazine.



She made an enlarged copy that was still square but twice as wide.



Lin cut off a rectangle from the right of the picture.



The picture was now a rectangle whose width was  $\frac{2}{3}$  of the height.

She then doubled the width of the picture.



The area of the rectangle was now  $139\,968\text{ mm}^2$ .

How high, in mm, was the original picture?

## Acknowledgment

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### The following year levels should sit THIS Paper:

Australia	Year 9
Brunei	Form 4
Hong Kong	Form 3
Indonesia	Year 10
Malaysia	Form 3
New Zealand	Year 10
Pacific	Year 9
Singapore	Secondary 2
South Africa	Grade 9



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### HOW TO FILL OUT THIS SHEET:



- Rub out all mistakes completely.
- Print your details clearly in the boxes provided.
- Make sure you fill in only one oval in each column.

### EXAMPLE 1: Debbie Bach

FIRST NAME

LAST NAME

### EXAMPLE 2: Chan Ai Beng

**FIRST NAME**

**LAST NAME**

### EXAMPLE 3: Jamal bin Abas

FIRST NAME

LAST NAME

**FIRST NAME** to appear on certificate

[illegible]

**LAST NAME** to appear on certificate

[illegible]

**Are you male or female?**

☐ Male ☐ Female



**Does anyone in your home usually speak a language other than English?**

☐ Yes ☐ No

**School name:** \_\_\_\_\_

## DATE OF BIRTH

Day		Month		Year	
0	0	0	0	0	0
1	1	1	1	1	1
2	2		2	2	2
3	3		3	3	3
	4		4	4	4
	5		5	5	5
	6		6	6	6

**CLASS**  
(optional)

(A)	(K)
(B)	(L)
(C)	(M)
(D)	(N)
(E)	(O)
(F)	(P)
(G)	(Q)

# TO ANSWER THE QUESTIONS

## MULTIPLE CHOICE

Example:  $6 + 4 =$

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

**START**

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

☐ A ☐ B ☒ C ☐ D



## FREE RESPONSE

Example:  $6 + 6 =$

- The answer is 12, so WRITE your answer in the boxes.
- Write only ONE digit in each box, as shown, and fill in the correct oval, as shown.

	1	2
<input type="radio"/> 0	<input type="radio"/> 0	<input type="radio"/> 0
<input type="radio"/> 1	<input checked="" type="radio"/> 1	<input type="radio"/> 1
<input type="radio"/> 2	<input type="radio"/> 2	<input checked="" type="radio"/> 2
<input type="radio"/> 3	<input type="radio"/> 3	<input type="radio"/> 3
<input type="radio"/> 4	<input type="radio"/> 4	<input type="radio"/> 4
<input type="radio"/> 5	<input type="radio"/> 5	<input type="radio"/> 5
<input type="radio"/> 6	<input type="radio"/> 6	<input type="radio"/> 6
<input type="radio"/> 7	<input type="radio"/> 7	<input type="radio"/> 7
<input type="radio"/> 8	<input type="radio"/> 8	<input type="radio"/> 8
<input type="radio"/> 9	<input type="radio"/> 9	<input type="radio"/> 9

1

☐ A ☐ B ☐ C ☐ D

2

☐ A ☐ B ☐ C ☐ D

3

☐ A ☐ B ☐ C ☐ D

4

☐ A ☐ B ☐ C ☐ D

5

<input type="radio"/> 0	<input type="radio"/> 0	<input type="radio"/> 0
<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 1
<input type="radio"/> 2	<input type="radio"/> 2	<input type="radio"/> 2
<input type="radio"/> 3	<input type="radio"/> 3	<input type="radio"/> 3
<input type="radio"/> 4	<input type="radio"/> 4	<input type="radio"/> 4
<input type="radio"/> 5	<input type="radio"/> 5	<input type="radio"/> 5
<input type="radio"/> 6	<input type="radio"/> 6	<input type="radio"/> 6
<input type="radio"/> 7	<input type="radio"/> 7	<input type="radio"/> 7
<input type="radio"/> 8	<input type="radio"/> 8	<input type="radio"/> 8
<input type="radio"/> 9	<input type="radio"/> 9	<input type="radio"/> 9

QUESTION	KEY	SOLUTION	STRAND	DIFFICULTY
1	A	<p>Option A correctly matches the front, side and top views.</p> <p>Option B does not match the front view or the top view.</p> <p>Option C does not match the front view or the side view.</p> <p>Option D does not match any view.</p>	Space and Geometry	Easy
2	A	<p>The difference between the clothes line highest and lowest level is <math>210 - 180 = 30</math> cm</p> <p>Convert this to mm is <math>30 \times 10 = 300</math> mm.</p> <p>One full turn of the handle increases the height by 30 mm; therefore we need to divide 300 by 30 which equals 10.</p> <p>It will take 10 full turns of the handle to raise the clothes line from its lowest to its highest level.</p>	Measurement	Easy
3	B	<p>The number of blocks used in the stages shows a pattern: 1, 5, 9, 13...</p> <p>The pattern is continued by adding four blocks to the previous term.</p> <p>So Stage 5 will contain <math>13 + 4 = 17</math> blocks.</p>	Algebra and Patterns	Medium
4	B	<p>3.323 Kb as a percentage of 7.25 Kb is calculated as</p> $(3.323 \div 7.25) \times 100\% = 45.83427\%.$ <p>This is 46% when rounded up.</p>	Number and Arithmetic	Medium
5	162	<p>Let <math>x</math> be the side length of the original picture.</p> <p>After the first transformation, the picture is still a square, but now with a side length of <math>2x</math>.</p> <p>After cutting off a rectangle from the right of the picture, the picture is now a rectangle with height <math>2x</math> and width <math>\frac{2}{3}</math> of <math>2x</math> which equals <math>\frac{4}{3}x</math>.</p> <p>After the final transformation, the width is doubled, <math>\frac{8}{3}x</math>, but the height stays the same, <math>2x</math>.</p> <p>The area of the picture is now 139 968 mm<sup>2</sup>. Hence,</p> $2x \times \frac{8x}{3} = 139\,968$ $\frac{16x^2}{3} = 139\,968$ $x^2 = \frac{139\,968 \times 3}{16}$ $x = \sqrt{26\,244}$ $x = 162$	Number and Arithmetic	Hard



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

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