

WA5MMGTW1

Two-dimensional space and structures

Core + Challenge

NAPLAN-style

Line Symmetry

I can find all the lines of symmetry of a shape and complete a shape or pattern in a mirror line.

Name: _____ Date: _____ Score: _____ / 56

Key idea

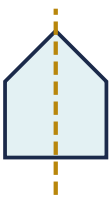
A **line of symmetry** (mirror line) cuts a shape into two halves that match **exactly** when you fold along it.

To complete a shape, put each new corner the **same distance** from the mirror line as its partner, straight across the line.

A shape can have **no** lines of symmetry, **1** line, or **more than one**. Always look for them all.

Example: the house has **1** line of symmetry. On the grid, the gold half completes the shape.

1 line of symmetry



Completing a shape: gold half



A Warm up *draw, complete and shade*

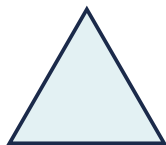
/ 16 marks

Draw **all** the lines of symmetry on each shape. Write how many there are. 1 mark each.

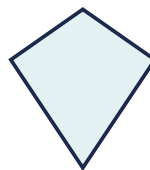
1 Lines: _____



2 Lines: _____



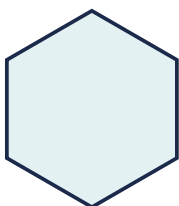
3 Lines: _____



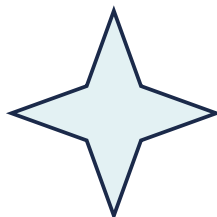
4 Lines: _____



5 Lines: _____



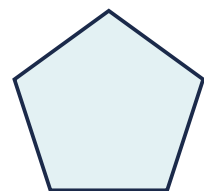
6 Lines: _____



7 Lines: _____



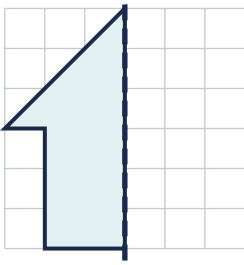
8 Lines: _____



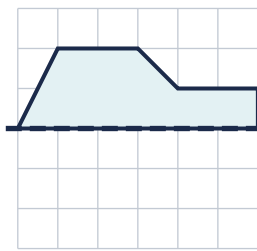
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Complete each shape so that the dashed line is a line of symmetry. 1 mark each.

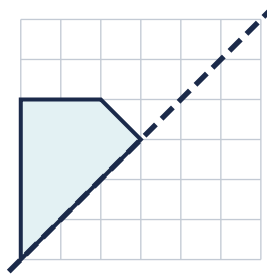
9



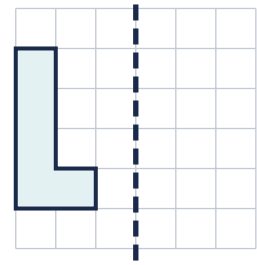
10



11

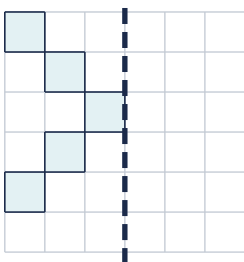


12

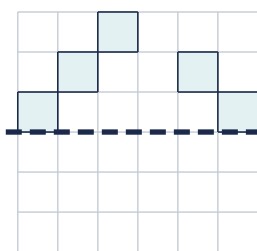


Shade the **fewest** squares so that each dashed line is a line of symmetry. 1 mark each.

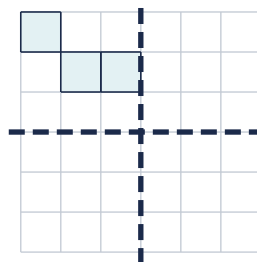
13



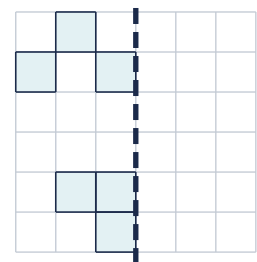
14



15



16

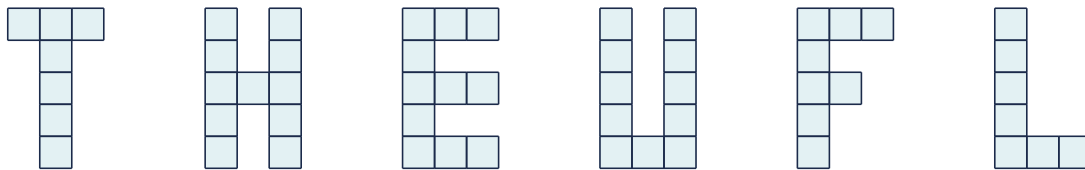


B

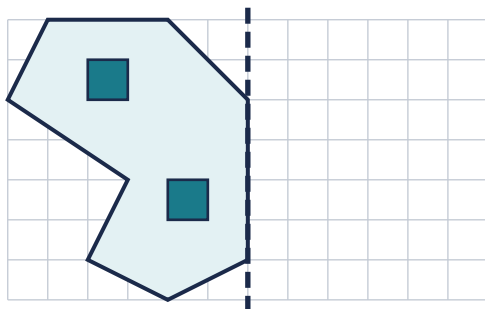
Practise *use the skill*

/ 21 marks

- 1 Draw **all** the lines of symmetry on each block letter. Then circle the letters that have **no** lines of symmetry. [3 marks]

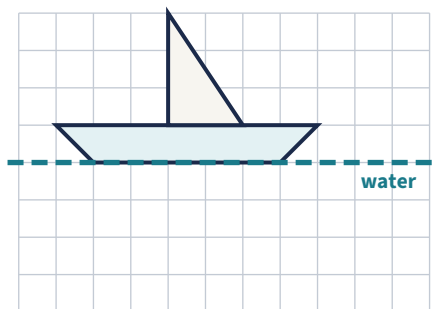


- 2 Maya is drawing a butterfly for the Kings Park Festival. Complete the butterfly so the dashed line is a line of symmetry. Remember the spots. [2 marks]

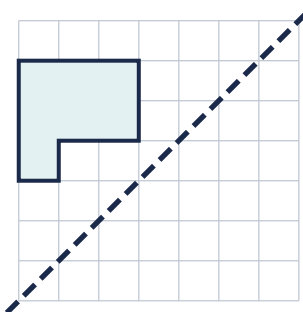


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- 3 A sailing boat is on the Swan River. Draw its **reflection** in the water. The water line is the mirror line. [2 marks]

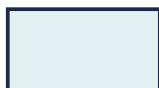


- 4 Reflect the flag in the **diagonal** mirror line. Hint: turn the page so the mirror line goes straight up. [3 marks]

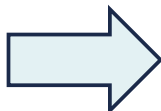


- 5 Write the letter of each shape in the correct column of the table. [3 marks]

A



B



C



D



E

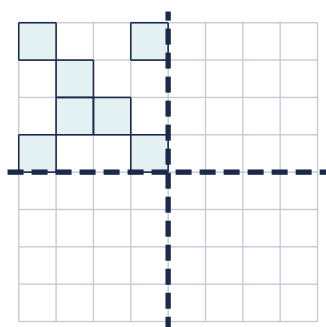


F



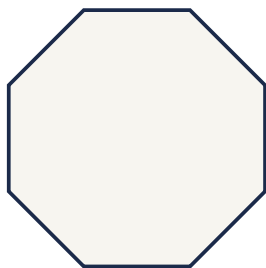
0 lines	1 line	2 lines	more than 2

- 6 This is a floor tile design for the school canteen. Shade the **fewest** squares so that **both** dashed lines are lines of symmetry. [3 marks]



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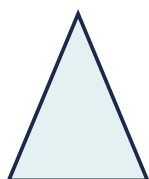
- 7 A stop sign is a **regular octagon**: 8 equal sides and 8 equal angles. Draw all its lines of symmetry. How many are there? [2 marks]



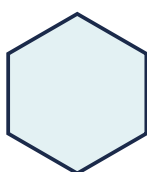
Answer: _____

- 8 Which shape has **exactly 2** lines of symmetry? Circle the letter. [1 mark]

A



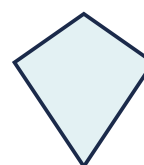
B



C

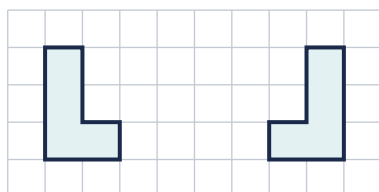


D

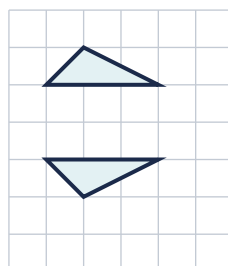


- 9 In each grid, one shape is the reflection of the other. Draw the **mirror line** with a ruler. [2 marks]

a)



b)



C Think it through explain your thinking

/ 10 marks

- 1 Ava says, "The dashed diagonal is a line of symmetry of this parallelogram because it cuts it into two identical triangles." Do you agree with Ava? Explain. [2 marks]



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- 2 **True or false?** “A shape with 4 equal sides has 4 lines of symmetry.” Explain, with a sketch if you like. [2 marks]

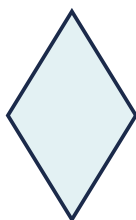
- 3 **Always, sometimes or never true?** “A triangle has at least one line of symmetry.” Circle one and draw examples. [2 marks]

Always

Sometimes

Never

- 4 What is the **same** and what is **different** about the lines of symmetry of this rectangle and this rhombus? [2 marks]



- 5 Sort these capital letters into the table: H, T, E, N, M, D, X, S. Then write **one more** capital letter of your own in **each** box. [2 marks]

H

T

E

N

M

D

X

S

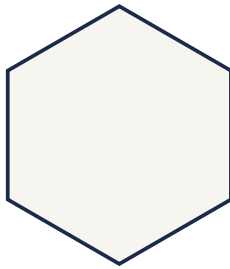
	Horizontal line: yes	Horizontal line: no
Vertical line: yes		
Vertical line: no		

D

Challenge *stretch yourself*

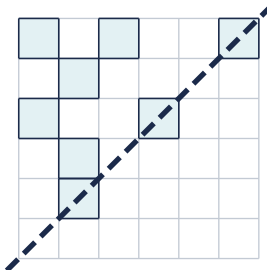
/ 9 marks

- 1** a) Draw all the lines of symmetry on the regular hexagon. How many go through two **corners**, and how many through the **middles of two sides**? b) How many lines of symmetry does a regular shape with **20** sides have? c) A regular shape has **10** sides. How many of its lines go through two corners? [3 marks]



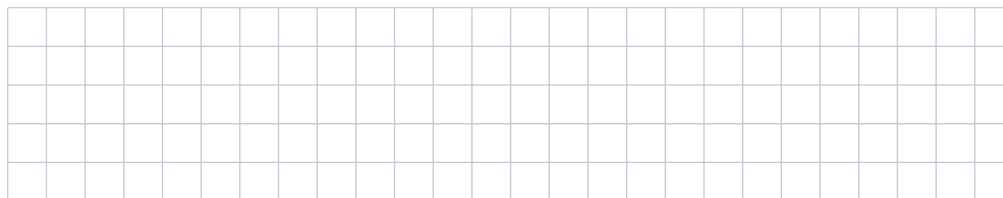
Answer: _____

- 2** The diagonal dashed line is a line of symmetry of this pattern. Shade the squares needed to complete it. How many squares are shaded **altogether**? Explain why the answer is **not** double the number shaded now. [3 marks]



Answer: _____

- 3** There are **5** different shapes you can make by joining **4** squares edge to edge. (A shape that is turned or flipped counts as the same.) Draw all 5 on the grid. Draw their lines of symmetry. Which shape has the **most** lines of symmetry? [3 marks]



Answer: _____

How did I go?

Warm up ____ / 16 Practise ____ / 21 Think it through ____ / 10 Challenge ____ / 9 **Total** ____ / 56

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