

WA5MMGTH1

Three-dimensional space and structures

Core + Challenge

NAPLAN-style

Nets of 3D Objects

I can connect 3D objects to their nets, and picture how a net folds up to make an object.

Name: _____ Date: _____ Score: _____ / 56

Key idea

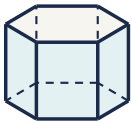
A **net** is a flat shape that folds up to make a 3D object. Each shape in the net becomes one **face** of the object.

A **prism** net has two matching ends joined by rectangles. A **pyramid** net has one base with a triangle on every side.

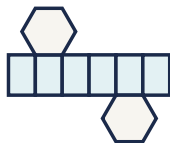
To check a net, **fold it in your head** one face at a time. In a straight row of three squares, the two **end** squares finish **opposite** each other.

Example: a hexagonal prism has 2 hexagons and 6 rectangles in its net, so it has **8 faces**.

Hexagonal prism



Its net



Ends are opposite



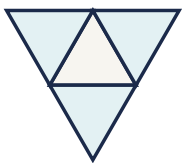
A

Warm up *name, circle and fold*

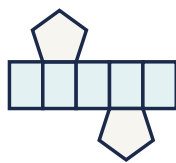
/ 16 marks

Name the object each net folds into. 1 mark each.

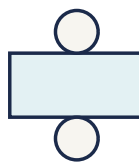
1



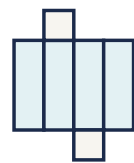
2



3



4



Will the net fold into a **cube**? Circle **Yes** or **No**. 1 mark each.

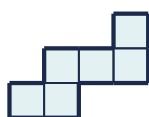
5



Yes

No

6



Yes

No

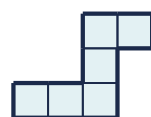
7



Yes

No

8



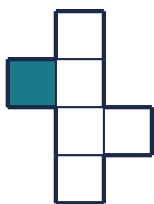
Yes

No

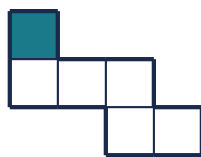
Nets of 3D Objects · WA5MMGTH1

The net is folded into a cube. Draw an **X** on the face **opposite** the shaded face. 1 mark each.

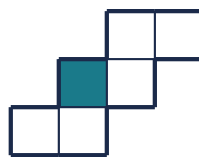
9



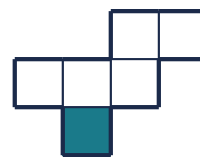
10



11

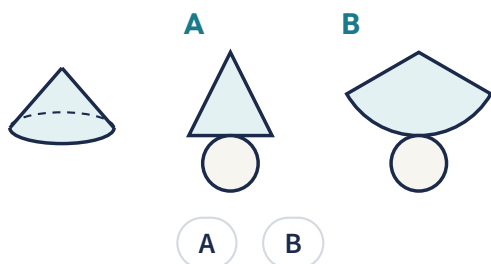


12

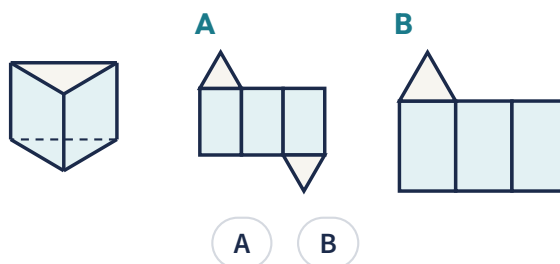


Which net makes the object? Circle **A** or **B**. 1 mark each.

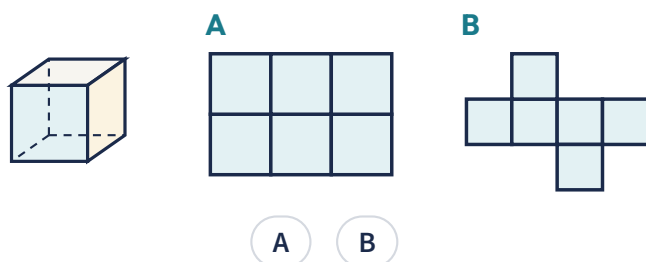
13



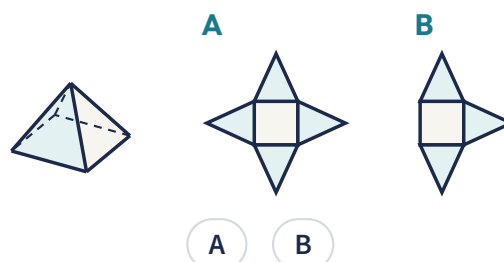
14



15



16



B

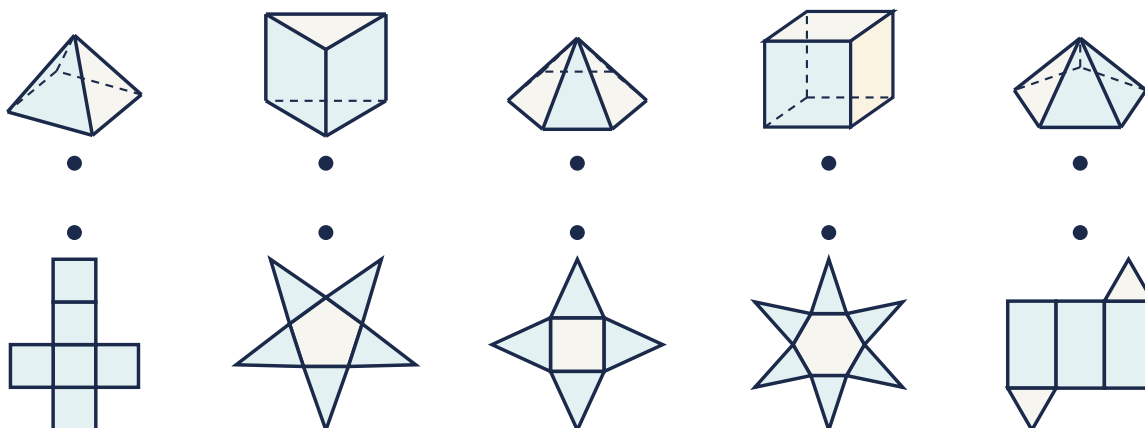
Practise use the skill

/ 21 marks

1

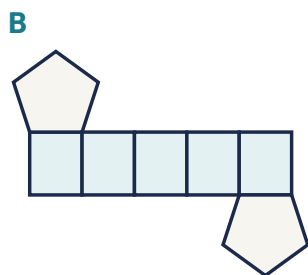
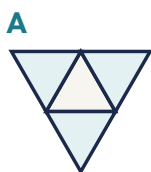
Draw a line to join each object to its net.

[3 marks]



- 2 Each net folds up to make an object. Complete the table.

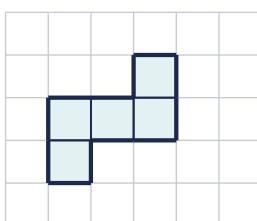
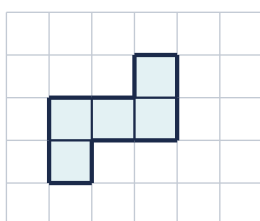
[3 marks]



Net	Faces	Edges	Vertices
A			
B			

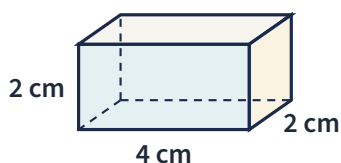
- 3 Each net of a cube is missing **one** square. Shade one square on each grid to complete the net. Do it a **different** way each time.

[2 marks]



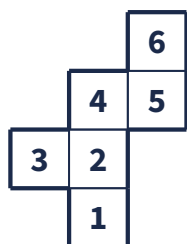
- 4 A tissue box is **4 cm** long, **2 cm** wide and **2 cm** high. Draw a net of the box on the grid. Each square stands for **1 cm**.

[3 marks]

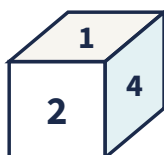


- 5 This net is folded to make a cube. Which cube could it make? Circle **A**, **B**, **C** or **D**. Then explain why **A** is wrong.

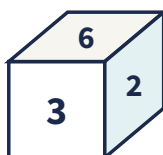
[2 marks]



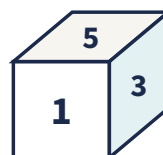
A



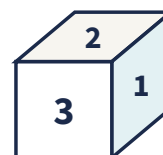
B



C

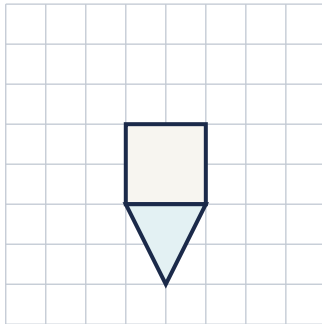


D

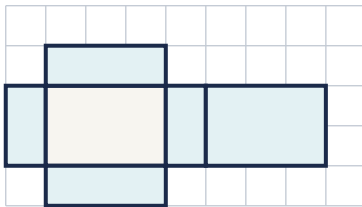


Nets of 3D Objects · WA5MMGTH1

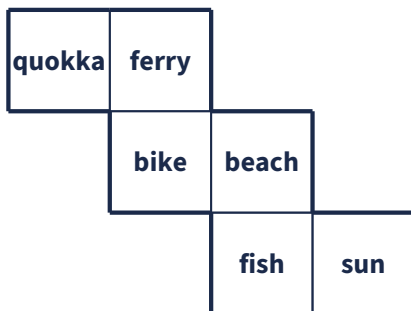
- 6 Mia is making a gift box for the school fete. It is a **square pyramid**. Complete its net on the grid. [2 marks]



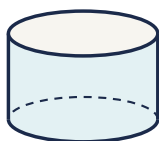
- 7 This is a net of a jewellery box from Fremantle Markets, drawn on a grid. Each square stands for **1 cm**. **a)** How long, wide and high is the box? **b)** What is the area of its **largest** face? [2 marks]



- 8 This net makes a Rottnest souvenir cube with a picture on each face. **a)** The cube sits with **quokka** on top. Which picture is on the bottom? **b)** Which picture is opposite **bike**? [2 marks]



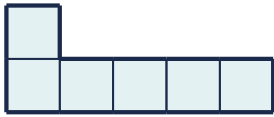
- 9 A tin of hot chocolate is a **cylinder**. Sketch a net of the tin. Name each shape in your net. [2 marks]



C**Think it through** *explain your thinking*

/ 10 marks

- 1 Priya says, “Any six squares joined edge to edge will fold into a cube.” She shows these six squares. Do you agree with Priya? Explain. [2 marks]

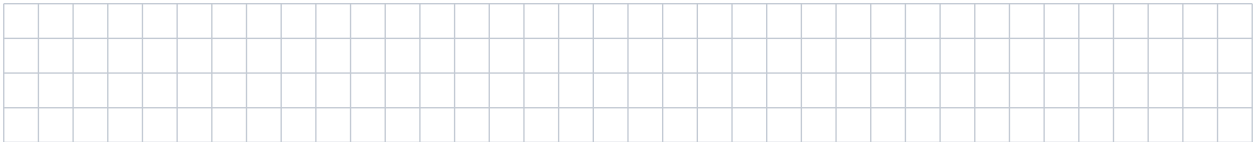


- 2 **Always, sometimes or never true?** “A net of a cube has four squares in a straight line.” Circle one. Draw nets on the grid to help explain. [2 marks]

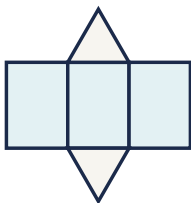
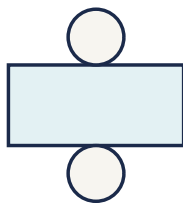
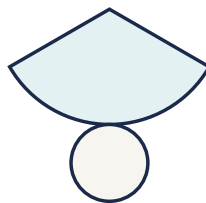
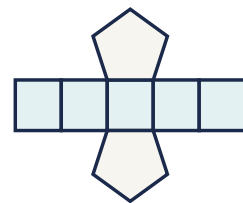
Always

Sometimes

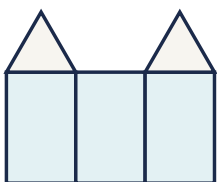
Never



- 3 Which net is the **odd one out**? Explain. [2 marks]

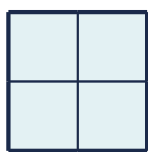
A**B****C****D**

- 4 Zara drew this net for a **triangular prism**. Will it fold up to make a closed triangular prism? Explain. [2 marks]



Nets of 3D Objects · WA5MMGTH1

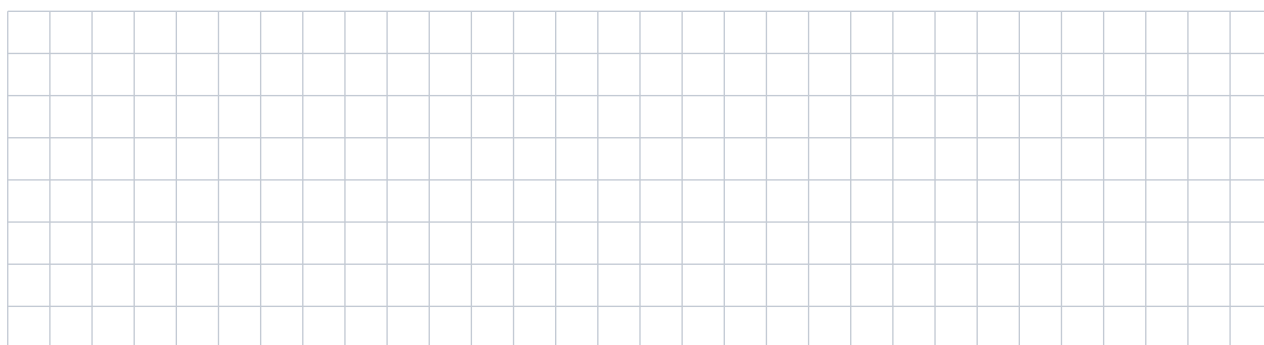
- 5 Explain why a net of a cube can **never** have four squares joined in a 2×2 block. [2 marks]



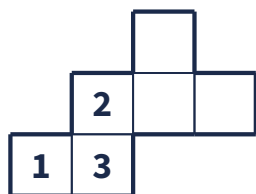
D Challenge *stretch yourself*

/ 9 marks

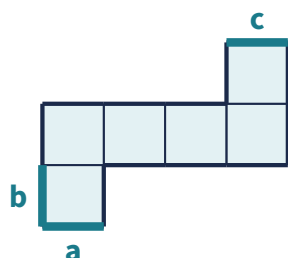
- 1 There are **11** different nets of a cube. Draw **four** different nets of a cube on the grid. (A net that is turned or flipped over counts as the same net.) [3 marks]



- 2 On a dice, **opposite faces add to 7**. Write the missing numbers **4**, **5** and **6** on this net of a dice. [3 marks]



- 3 When this net is folded into a cube, the edges with the same letter join together. For each marked edge, write its letter next to the edge it joins. [3 marks]



How did I go?

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

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