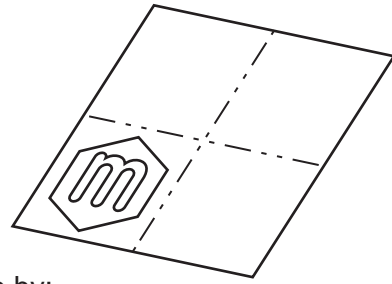


Section A

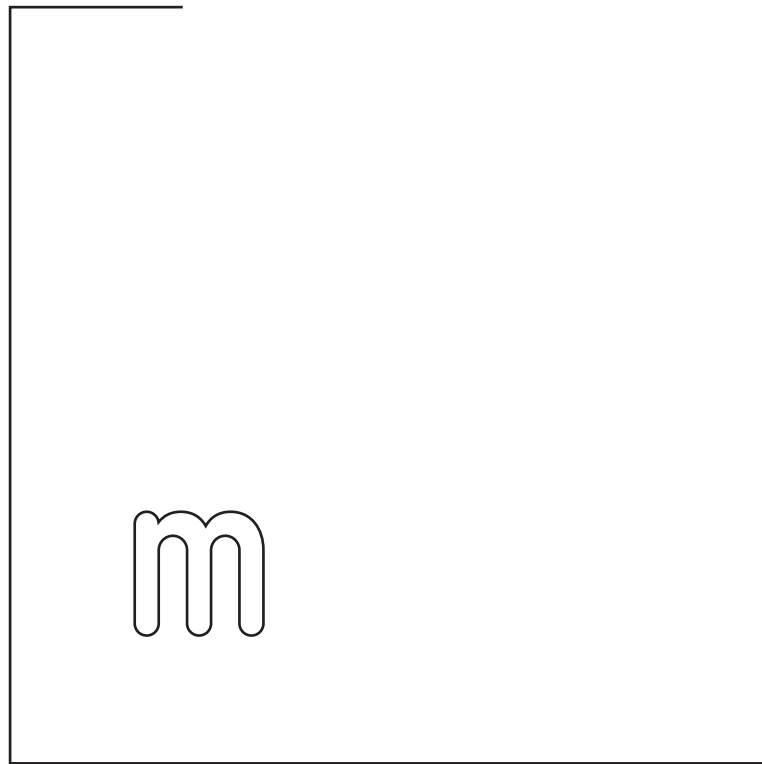
Answer **all** questions in this section.

A1 A design for a folding map is shown on the right. Versions of the map are used to guide visitors around gardens, castles and farms.



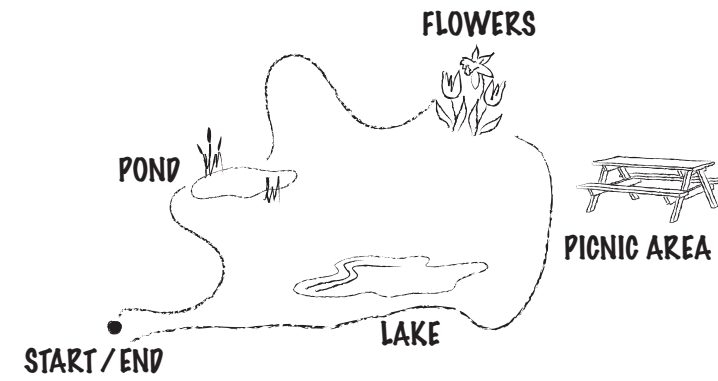
(a) Complete the drawing below of the design for the front of the map by:

- (i) completing the outline of the sheet of paper; [2]
- (ii) drawing the fold lines; [3]
- (iii) constructing a hexagon with 20 mm length of side around the letter m. [2]

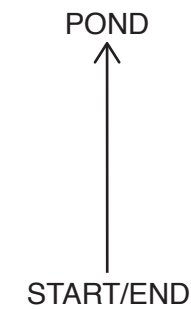


(b) The letter m is die cut. Use a sketch and notes to show what is meant by 'die cutting'. [2]

A2 A sketch of a route around a garden is shown below.



(a) Complete the schematic drawing below of the route around the garden. [4]

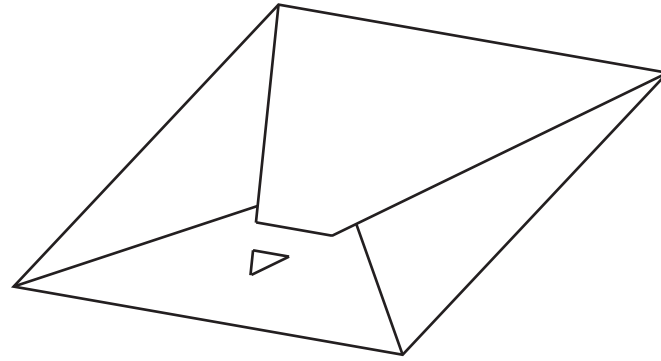


(b) State **two** ways of making the schematic drawing clearer to understand.

- 1. [1]
- 2. [1]

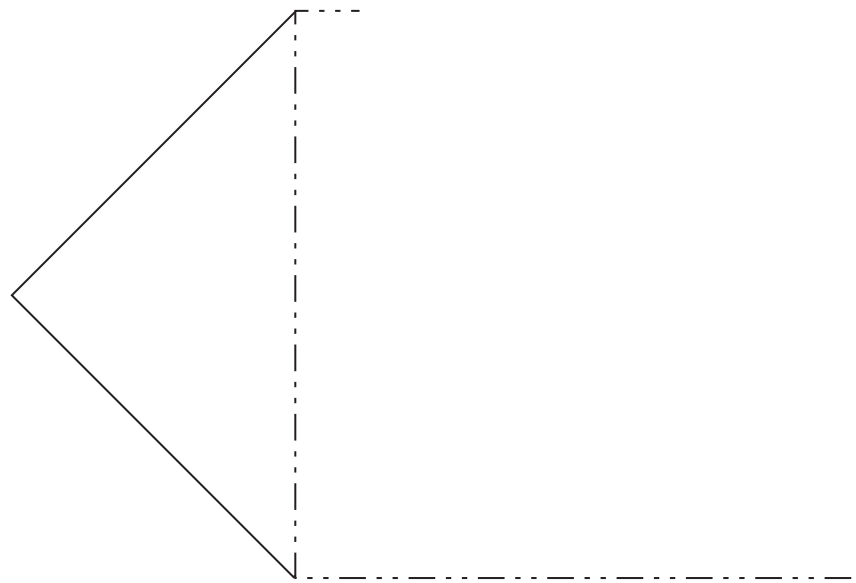
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A3 A map is packaged in the card envelope shown below.



(a) Complete the development (net) below of the card envelope.

[6]

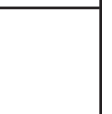


(b) The table below shows the sales of the maps over a three-year period.

	2014	2015	2016
sales	800	400	600

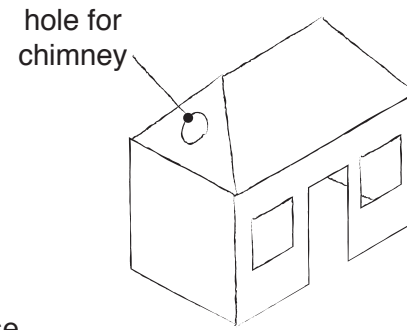
Construct a line graph to show the sales over the three-year period.

[4]



Section B
Answer **either** question **B4** or **B5**.

B4 A sketch of a child's play house is shown on the right.



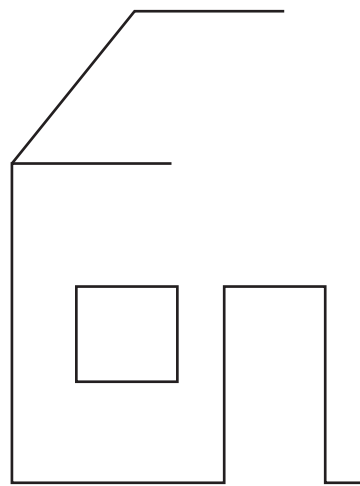
(a) Complete the following orthographic views of the play house.

(i) the front view [5]

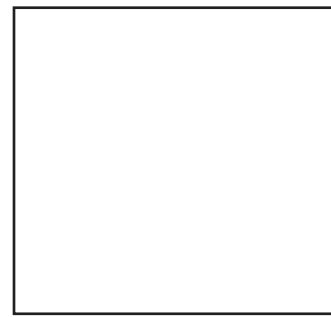
(ii) end view [4]

(iii) plan [4]

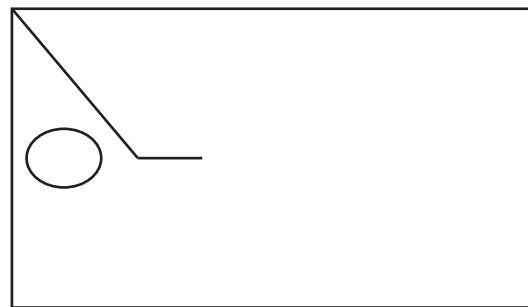
(b) Add the projection symbol in box A. [3]



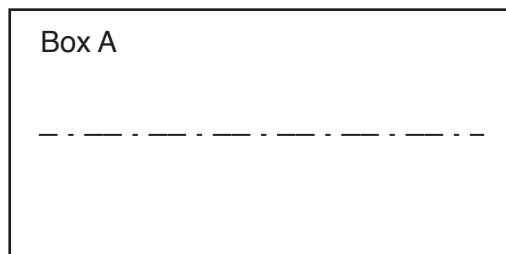
front view



end view



plan



(c) The play house is made from corrugated cardboard.

(i) Draw a sectional view of corrugated cardboard. [3]

(ii) Complete the list below to show the equipment required to cut out a window in the play house.

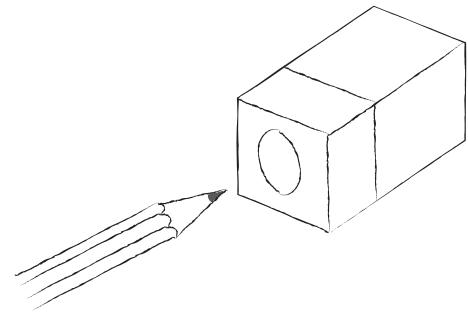
1. Cutting mat
2. [1]
3. [1]

(iii) Market testing has shown that the area around the bottom of the cut out windows tears easily.

Use sketches and notes to show a method of strengthening the bottom of the opening by using the corrugated cardboard removed for the window. [4]

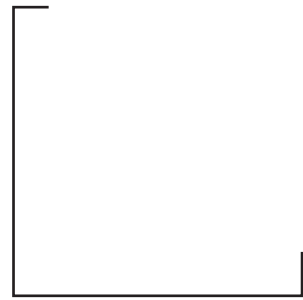
For
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use

B5 A sketch of a pencil sharpener case is shown on the right.

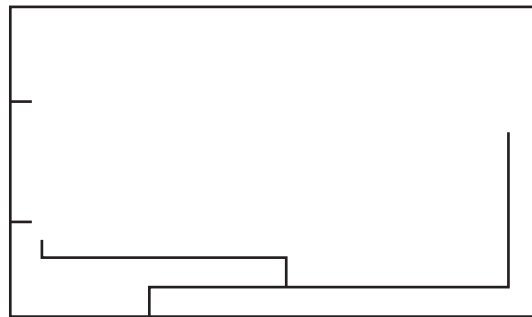


(a) Complete the estimated one-point perspective drawing below of the pencil sharpener case. [8]

+ VP1



(b) Complete the sectional view of the pencil sharpener case below. [7]



(c) Polymorph is used to determine the final shape of the pencil sharpener case.

Give **two** properties of polymorph that make it a suitable material for modelling.

1. [1]
2. [1]

(d) Orthographic views of the pencil sharpener mechanism are shown on the right.

Complete the planometric view below of the pencil sharpener mechanism. Estimate all dimensions and include hidden detail. [8]

