Section A

Answer **all** questions in this section.

Sketches of the five parts of a toy figure are shown below.
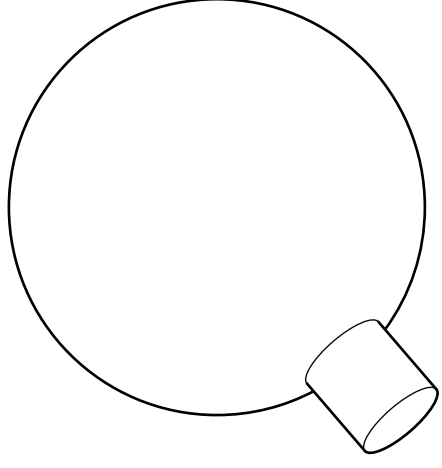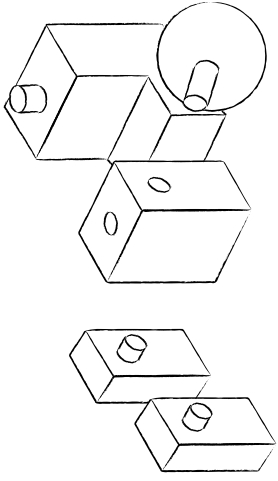
A1 (a) Complete the full size orthographic views of the fully assembled toy figure by:

   (i) adding the missing lines to the plan; [4]

   (ii) adding the missing hidden detail to the front view; [3]

   (iii) adding the projection symbol in the given box. [3]

plan

front view

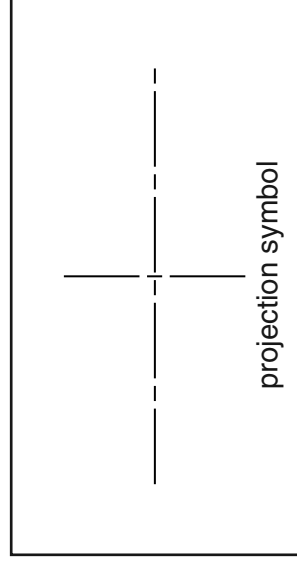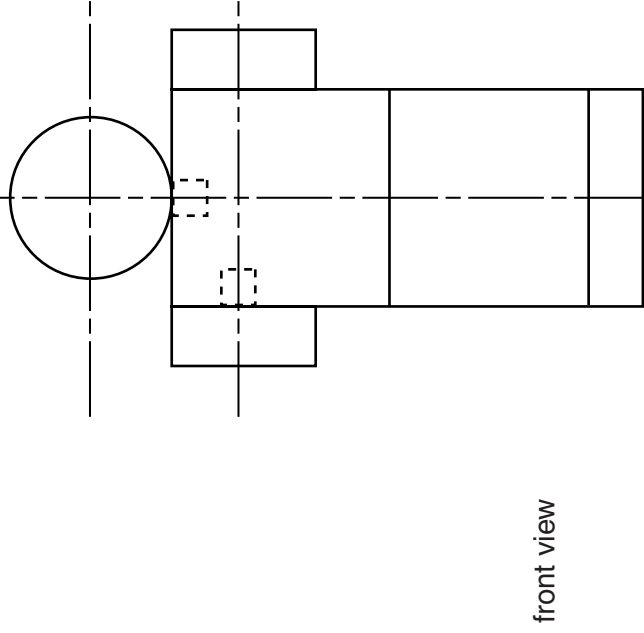projection symbol

A2 (a) Render the head of the toy figure below to make it appear spherical. [2]

(b) A stencil is to be used to add a name to the toy figure. In the space below use sketches and notes to show how to use a stencil. [2]

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[Turn over

A3 The parts of the toy figure are sold in the blister package shown below.

card backing sheet
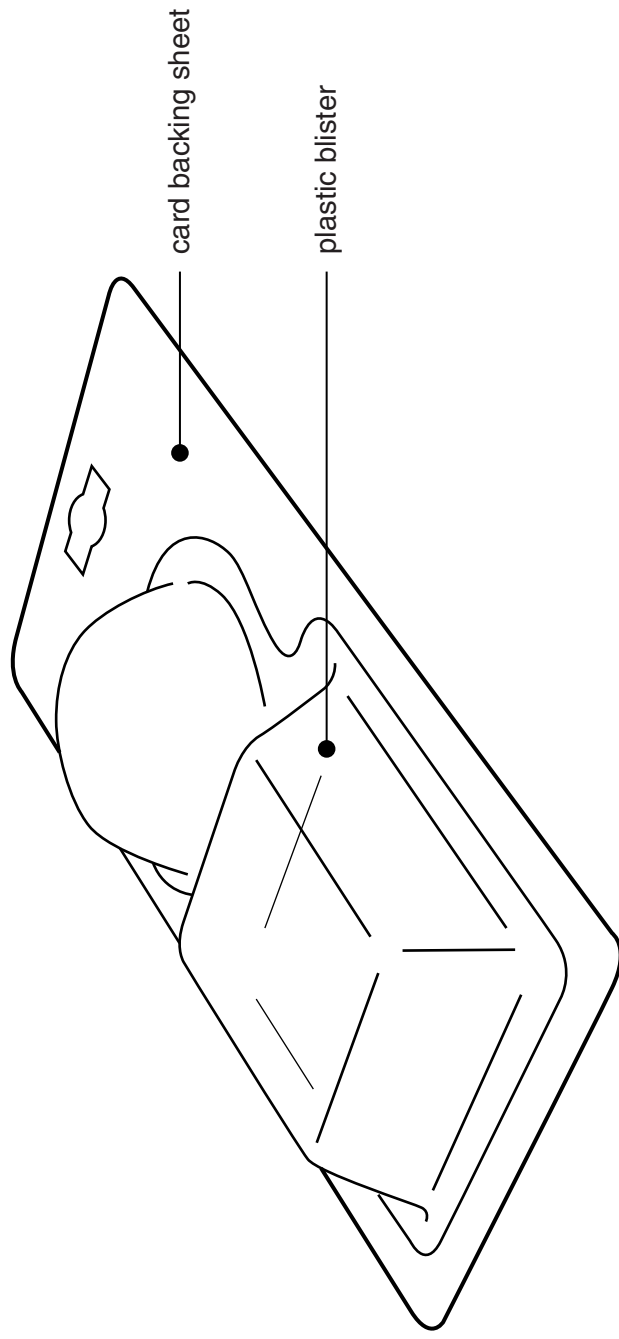
plastic blister

(a) In the space below complete the exploded sectional view of the blister package. [4]
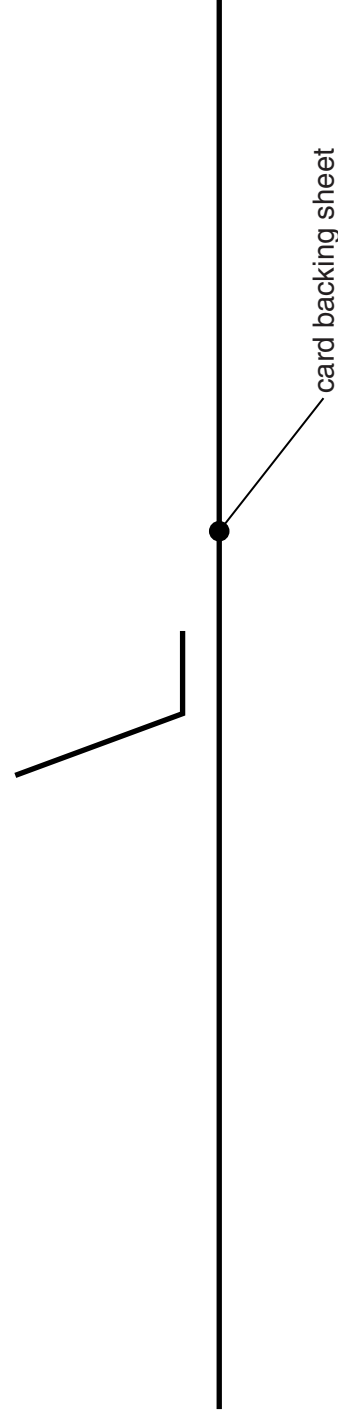
(b) The plastic blister is made by vacuum forming. Describe **three** main features of the former required to vacuum form the blister successfully.

....

....

....

....

....

....
[3]

(c) The backing sheet of the blister package is made from card.

(i) In the space below draw the symbol used to show that the card can be recycled. [2]

card backing sheet

(ii) Explain **one** reason why the card should be recycled.

....

....

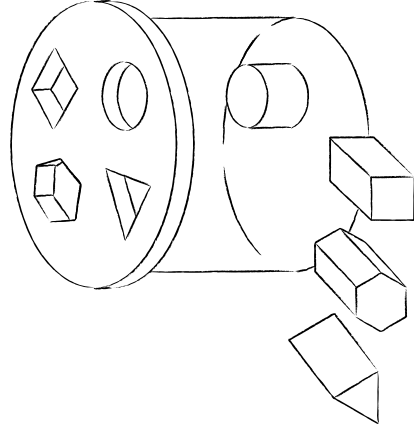...
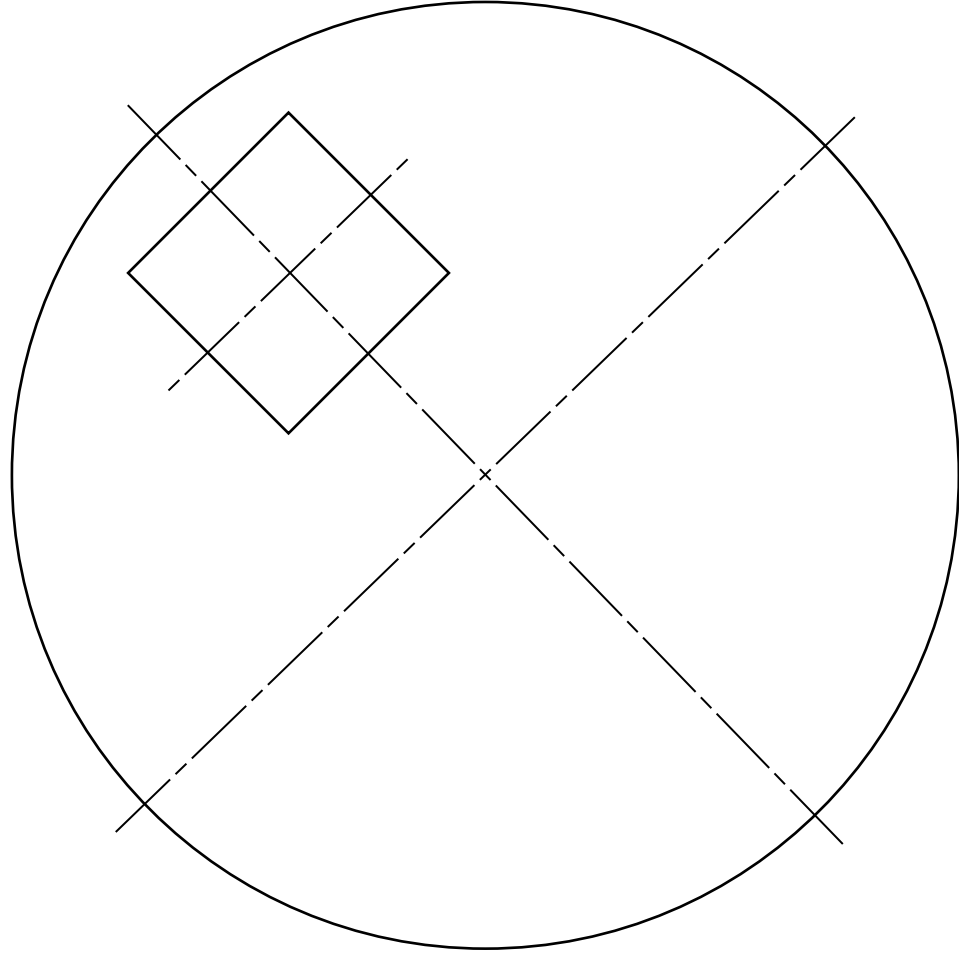[2]

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

B4 A sketch of a shape sorter is shown on the right.

(a) On the centre lines below complete the 1 : 2 scale drawing of the top of the shape sorter by accurately adding:

  (i)   a ⌀60 circle; [3]

  (ii) a 60 side equilateral triangle; [5]

  (iii) a 40 side regular hexagon. [5]

(b) The shape sorter is available in four different colours. The 2014 sales for the four different coloured shape sorters is shown in the table below.

red	blue	yellow	green
450	1500	900	750

Draw a pie chart on the centre lines below to show the 2014 sales of the shape sorter. Use colour and labels to enhance the appearance of the drawing. [7]
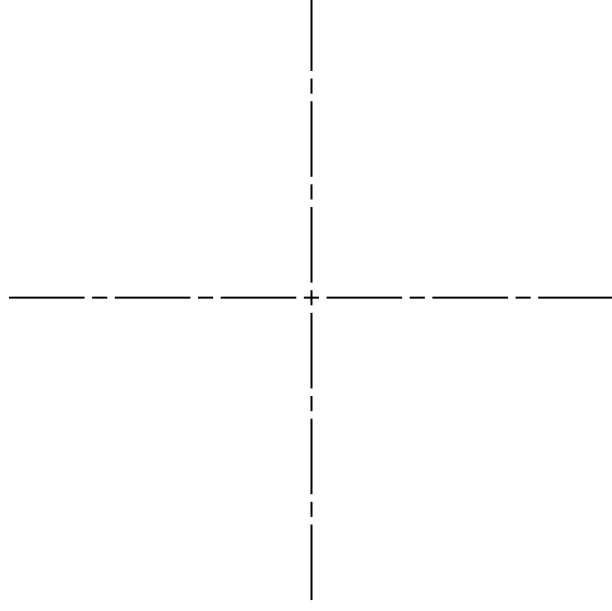
(c) A modified design for the top of the shape sorter is to be produced by CAD.

  (i) Complete the words below to show the meaning of the word CAD. [2]

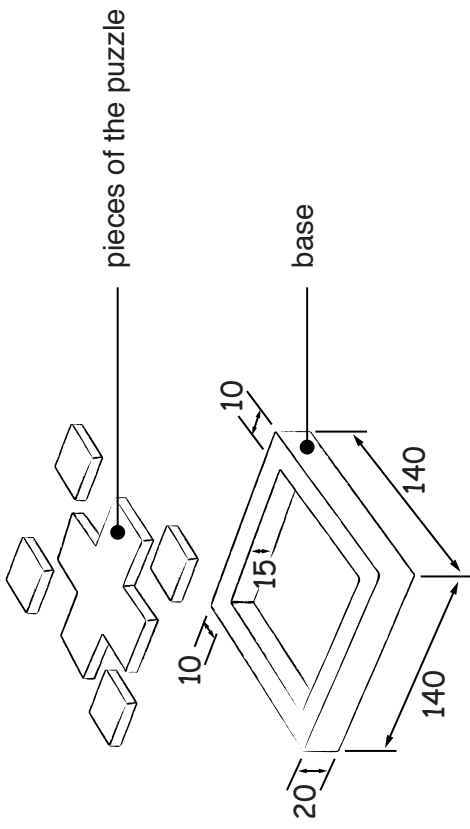 Computer A .... D ....

  (ii) A line drawing of an elliptical shape has been found on the internet and is to be used in the modified design for the top of the shape sorter. Explain how to capture this elliptical shape from the internet and use it in the CAD drawing.

  ....
  ....
  .... [3]

0445/23   May/June 2015   **1 hour**
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[Turn over

Sheet 2 of 2

B5 A sketch of a puzzle is shown below.

pieces of the puzzle

base

10

10

15

20

140

140

(a) The pieces of the puzzle are made from foamboard.

(i) Label the materials on the sectional view of a piece of foamboard below. [2]

(ii) Complete the list below to show three pieces of equipment that would be used to cut the foamboard. [2]

1. A cutting mat

2. ....

3. ....

(iii) Explain **one** reason why foamboard is considered a suitable material for the pieces of the puzzle. [2]

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....

....
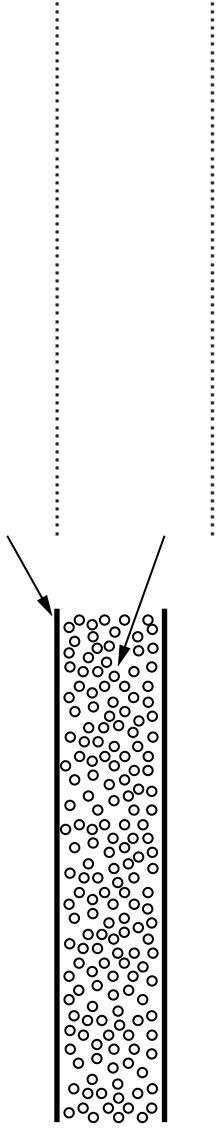
(b) A drawing of one of the pieces of the puzzle is shown below. Construct a scale 1 : 3 enlargement of the given piece of the puzzle. [10]

(c) From the start point A draw a 1 : 2 scale isometric view of the base of the puzzle. Do **not** include the pieces of the puzzle. [9]

A