Section A

Answer **all** questions in this section.

A1 On the right is shown an isometric pictorial drawing of an octagonal pencil holder. These pencil holders are placed in all the guests' bedrooms in a hotel.

The outer wrapper and the insert of the pencil holder are printed onto two pieces of card.

These are sent out 'flat packed' to customers. (Note the pencil holder does **not** have a bottom.)

(a) In the space below, complete the following 'first angle' **orthographic views** of the pencil holder. (The **end view** has been completed for you.)

   (i) A **front view** in direction of arrow 'F'. [6]

   (ii) A **plan** in direction of arrow 'P'. [5]

P

E →

insert

Ø30 mm

outer wrapper

20

F ↑
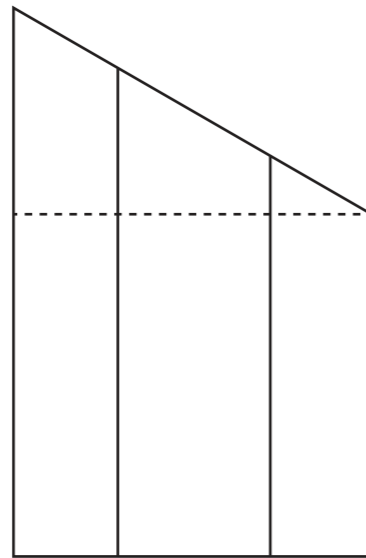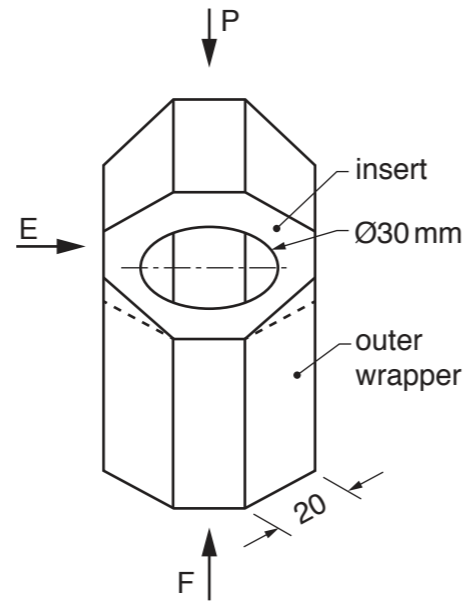
Front view

End view

Plan   Scale 1:1

(b) In the space below, draw a full size **development (net)** of the pencil holder outer wrapper.
Use the correct convention for fold lines, cut lines and a glue tab. [9]

(c) In order for the pencil holder to keep its shape an octagonal insert is fitted. Complete the drawing of the insert by adding:
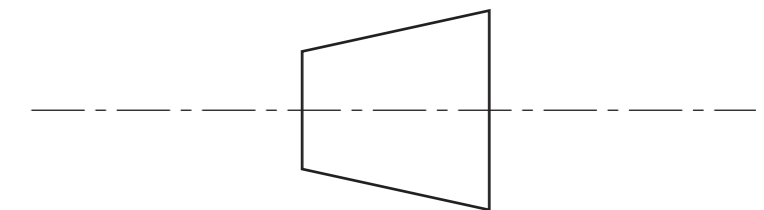
   (i) the octagon [3]

   (ii) suitable glue tabs. [2]

30

octagonal insert
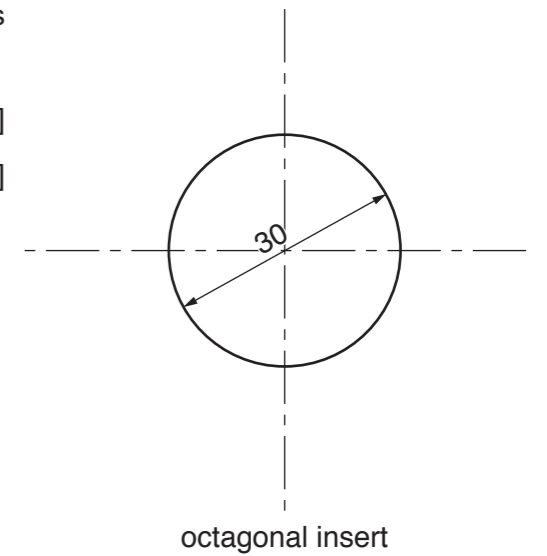
(d) As the pencil holders have to be assembled by the customer, glue has been found to be too messy.
Name an alternative method of joining that could be used.

....

.... [2]

(e) Complete the symbol for **First Angle Projection**. [3]

For Examiner's use	
A	
B	
B	
Total	

Centre Number ....   Candidate Number ....   Candidate Surname ....   Other Names ....   **[Turn over**

Sheet 1 of 2

Answer any **two** questions from this section.

B2 (a) The orthographic drawing on the right shows a container to hold four sauce bottles, to be placed on restaurant tables.

On the isometric axes below, complete a full size isometric drawing of the container with the corner 'A' on the given point 'A'.

The thickness of the material is 5 mm. [9]

10

20

120

40

A   70

50

A

A
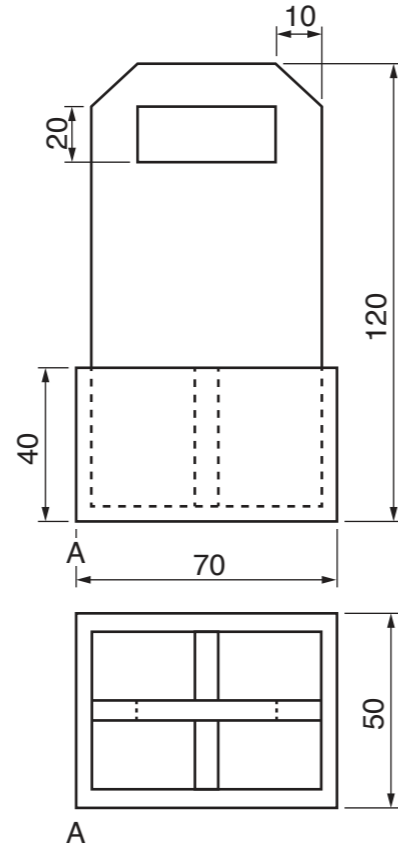
(b) A survey of the cars sold at a garage over a twelve month period showed that the most popular colours were:

White – 90, Black – 75, Grey – 60, Blue – 60, Red – 45 and Silver – 30.

(i) On the circle below, construct a **pie chart** to display this information. [4]

(ii) Add a suitable key to your solution. [2]
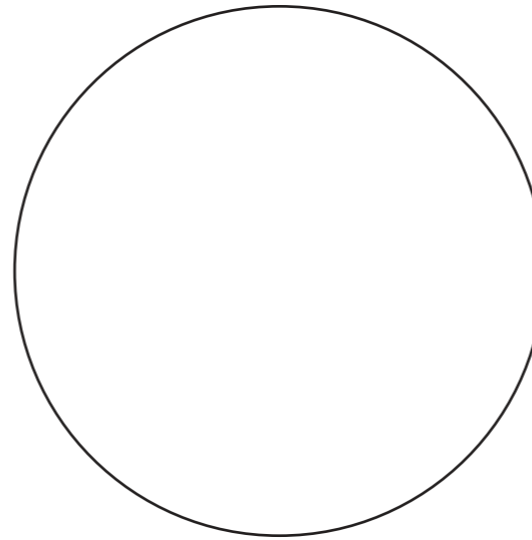
**(c)** The drawing on the right shows an advertising board to be made from three pieces of **'foam board'**.
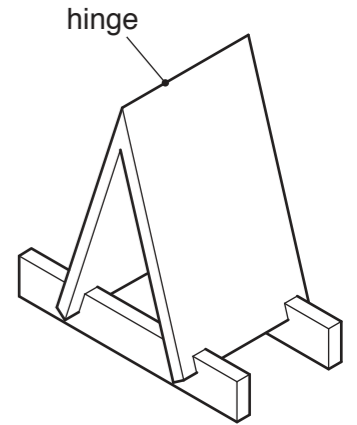
hinge

(i) In the space below, draw a cross section through a piece of 'foam board' to show its construction. [2]

(ii) The faces of the advertising board are to be made from one piece of foam board with a hinge in the centre.

In the space below, show how a piece of foam board could be cut to make the required hinge. [4]

(iii) Complete the list below by adding the names of four tools used to mark out and cut out the foam board. [4]

1 ....

2 ....

3 Cutting mat...

4 ....

5 ....

B3 **(a)** The drawing on the right shows the outline of a sign to be hung on a hotel door.

Using the given centre lines, construct a full size drawing of the sign. [9]

R35

R15

R15

120

70
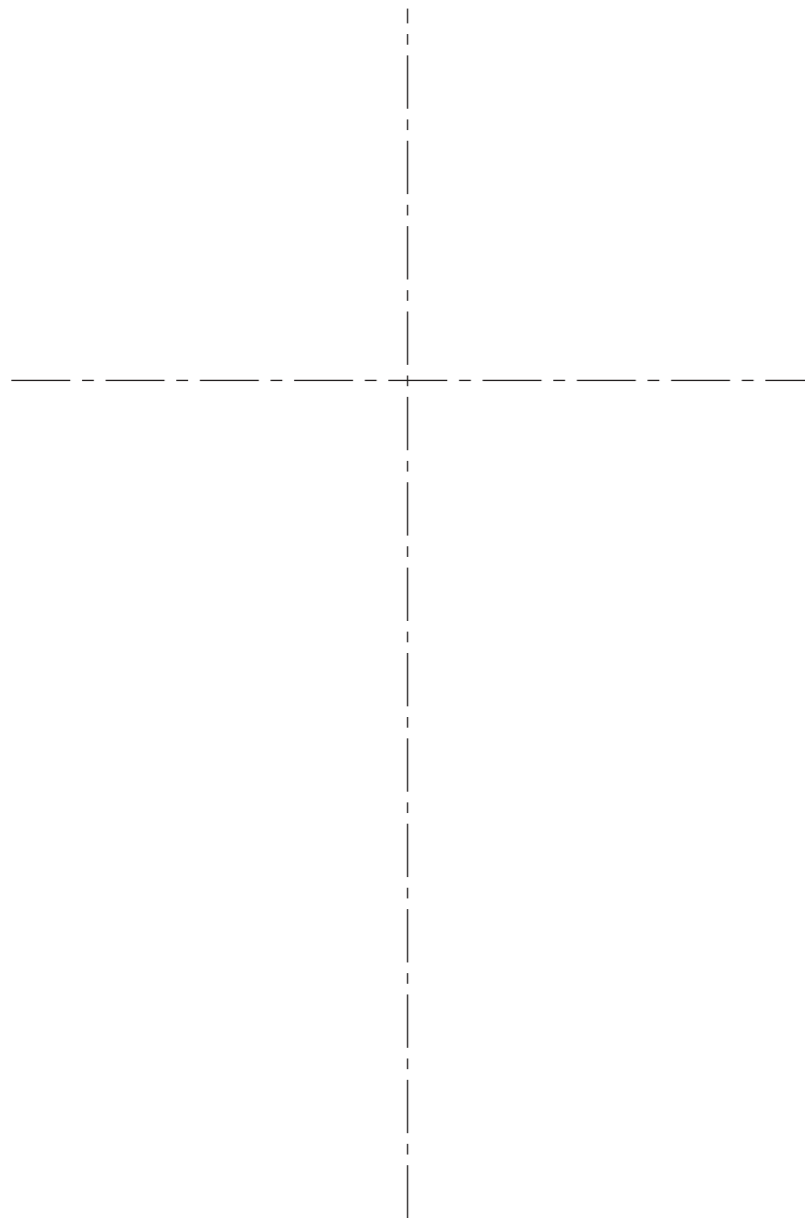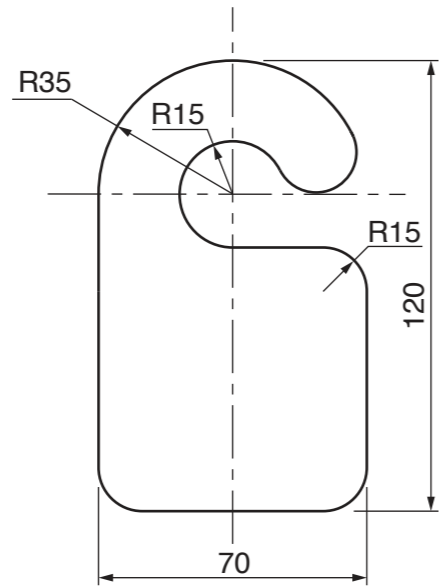
(b) The freehand drawing below shows the letter 'H' from a hotel sign.
The letter is made from Acrylic (Perspex).

(i) Enhance the drawing by using the **'thick and thin'** line technique. [4]

(ii) Render the drawing to show that it is made from a shiny (reflective) material. [4]
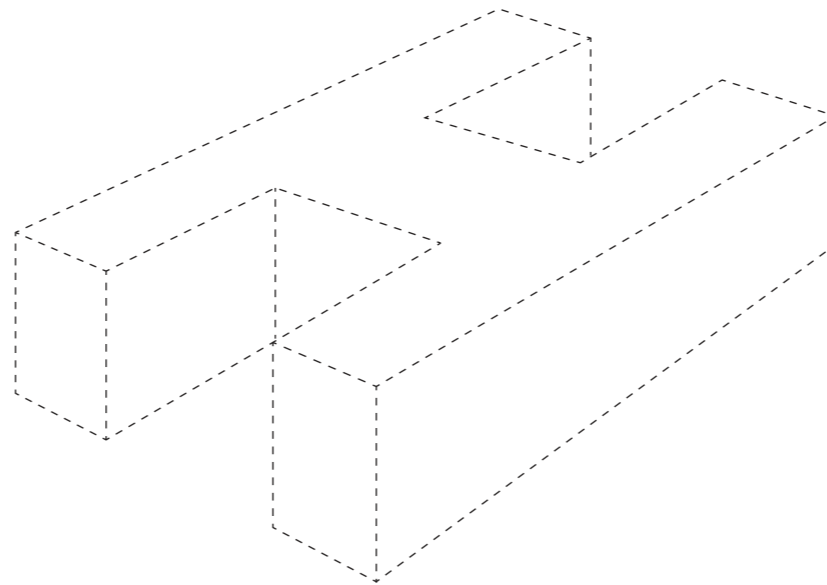
(c) The orthographic drawing shows a seat from a children's soft play area in a hotel.
Draw on the given centre lines a **planometric** view of the seat to a scale of 1:5. [8]
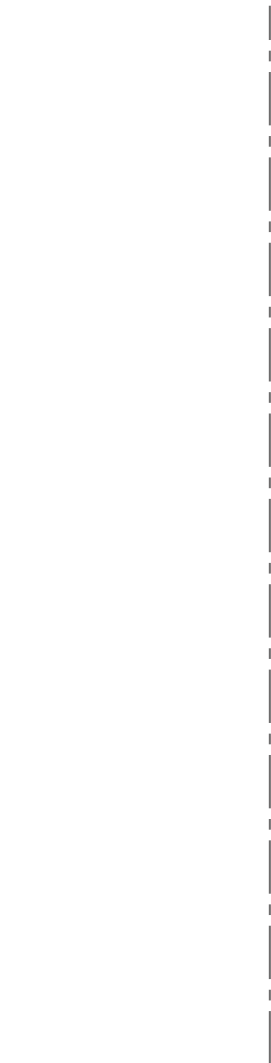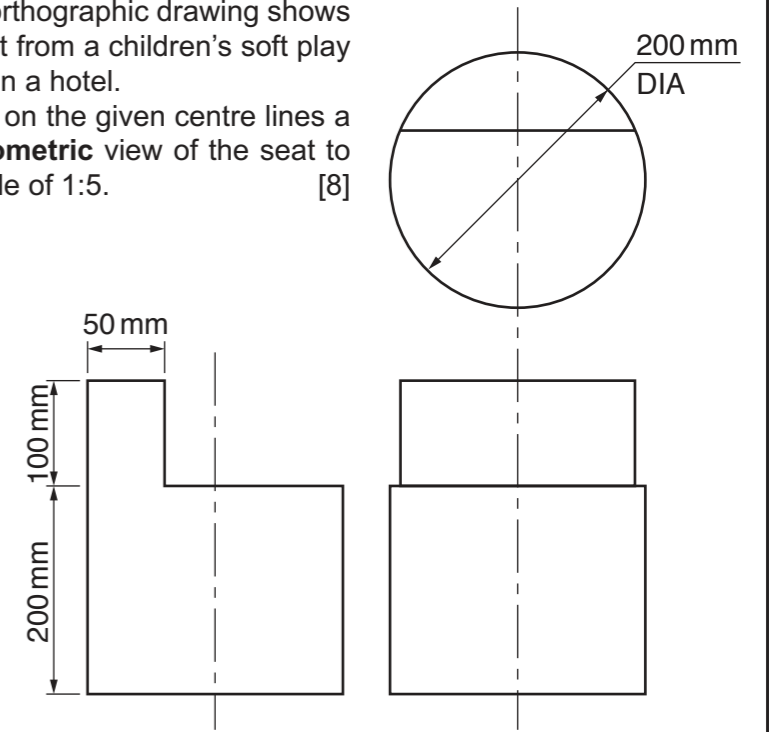
200 mm
DIA

50 mm

100 mm

200 mm

Centre Number .... Candidate Number .... Candidate Surname .... Other Names .... **[Turn over**

B4 **(a)** The third angle orthographic drawing on the right shows a chocolate bar provided for hotel guests.

    (i) Below, complete the estimated two point perspective drawing of the chocolate bar using the given front corner shown with bold 'dot' . [10]

    (ii) Complete the symbol for third angle projection. [3]

VP₁ — VP_1

VP₂ — VP_2
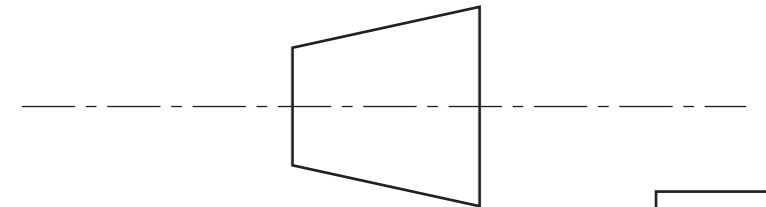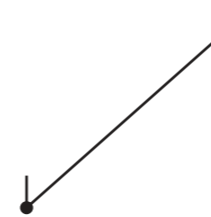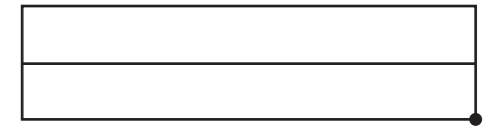
Symbol for third angle projection.

(b) The number of guests staying at the hotel is:

    Monday: 60, Tuesday: 65, Wednesday: 70,
    Thursday: 60, Friday: 45, Saturday: 30 and Sunday: 30.

    (i) In the space below, construct a **3D Bar-chart** to display the information. [4]

    (ii) Use shading or colour to enhance your drawing. [2]

(c) In order to prevent the loss of keys the hotel attaches an elliptical tag to each key. On the given centre lines, construct an ellipse with a major axis of 140 mm and a minor axis of 80 mm. Do **not** draw the keyring or key. [6]