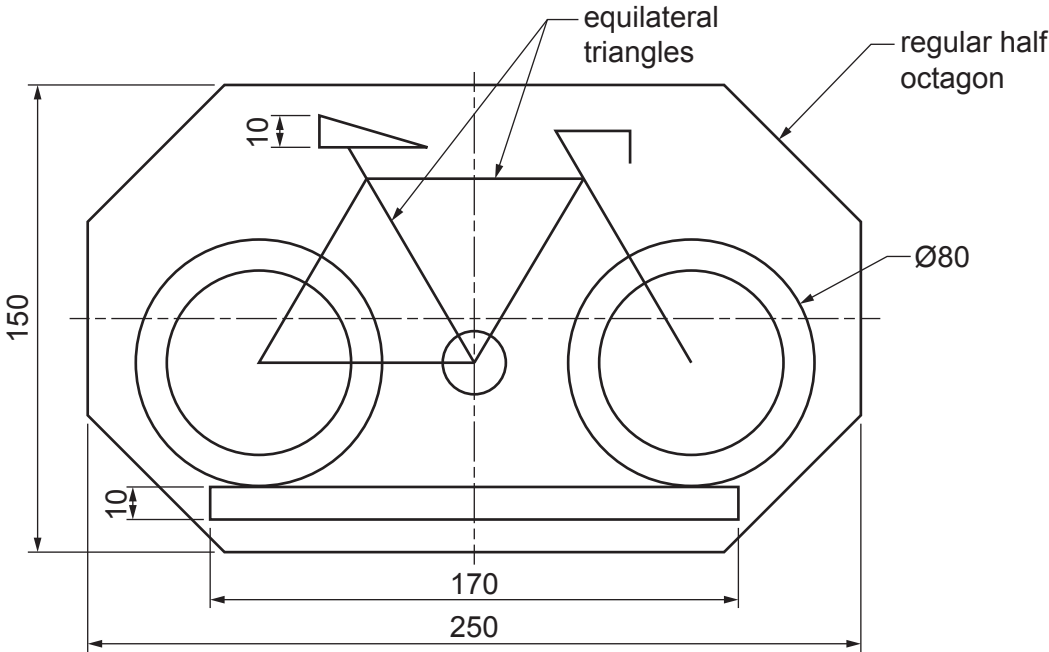


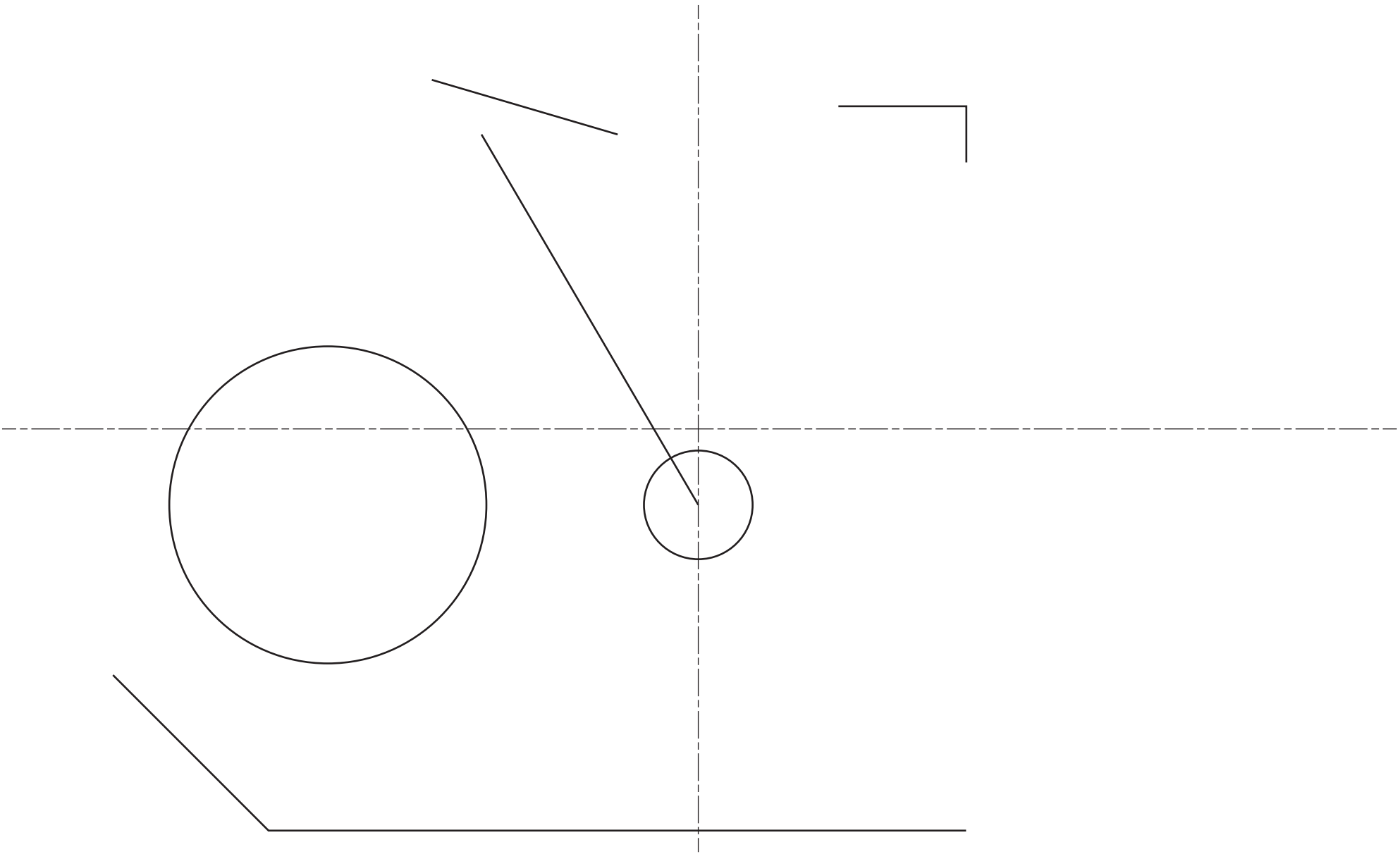
Section A
Answer **all** questions in this section.

A1 A sign for a cycle lane is shown below.



Complete the full-size drawing of the cycle lane sign by adding:

- (a) the frame [5]
- (b) the wheels [3]
- (c) the seat [2]
- (d) the rectangle below the cycle [2]
- (e) the outline of the sign. [4]



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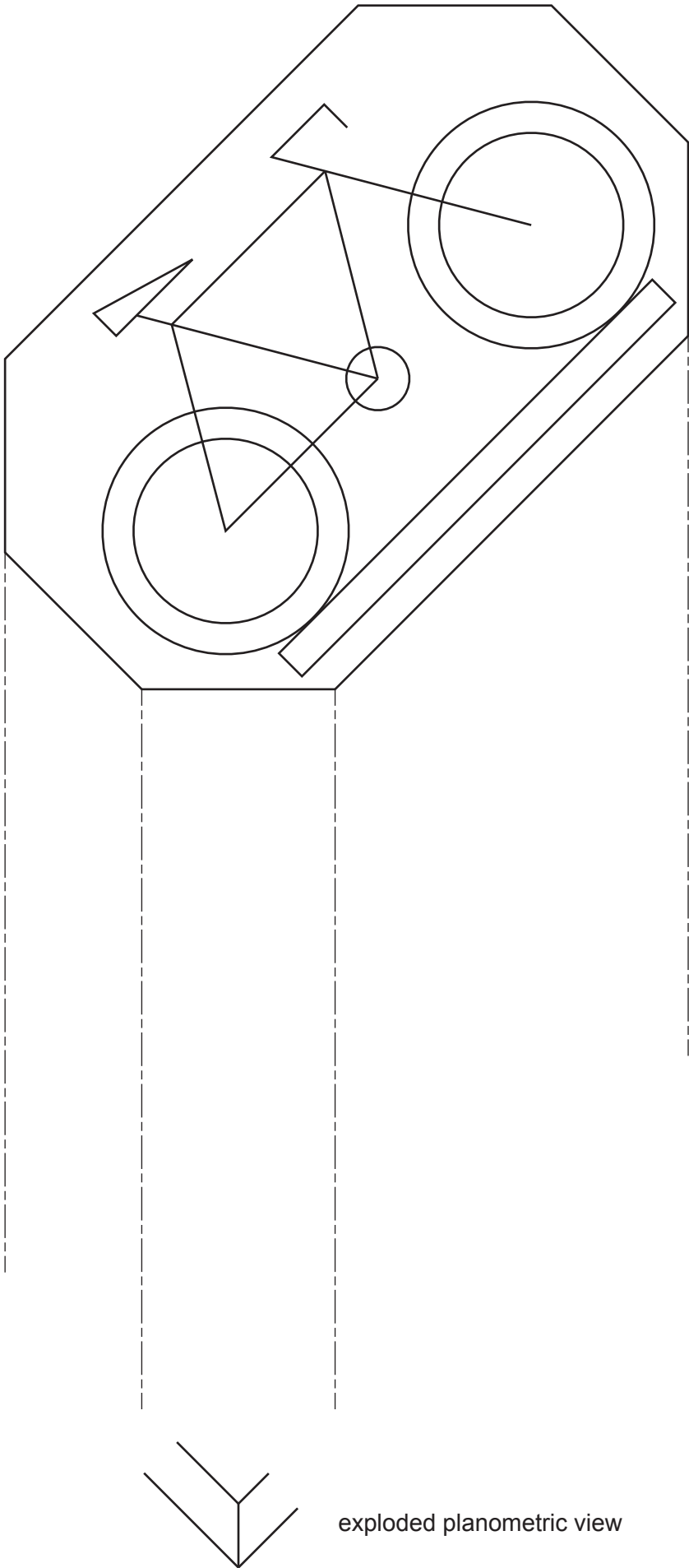
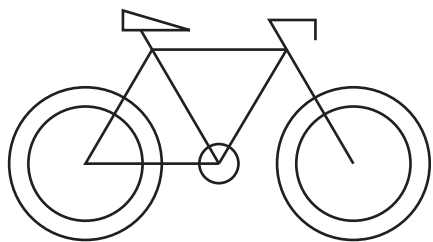
A2 The cycle lane sign will be mounted onto a rectangular-shaped backboard.

The rectangular-shaped backboard measures 250 mm × 150 mm × 20 mm thick.

Complete the exploded planometric view of the cycle lane sign and rectangular-shaped backboard to a scale of 1 : 2.

[5]

- A3 (a)** The cycle lane sign will be made from a rigid thin plastic sheet.
- (i) State **one** suitable rigid thin plastic sheet that could be used to make the cycle lane sign.
- [1]
- (ii) Name a suitable method of printing the design onto the thin plastic sheet.
- [1]
- (b)** Another sign is required to inform people that cycling is not allowed.
- Sketch a modification to the sign below to inform people that cycling is not allowed.
- [2]



Section B
Answer **one** question, **either** Question **B4** or **B5**, from this section.

B4 Orthographic views of a design for a cycle stand are shown below.

The design is made from 25 mm thick softwood.

The diagram shows four views of a cycle stand. The **plan** view at the top shows a rectangular base with two vertical supports. The **front view** at the bottom left shows a base of 450 units, with a 50-unit wide section on the left and a 100-unit wide section on the right. The height of the base is 75 units, and the vertical supports are 50 units high. The **side view** at the bottom right shows a base of 350 units, with a 75-unit wide section on the left and a 200-unit wide section on the right. The height of the base is 75 units, and the vertical supports are 50 units high. The **isometric view** on the right shows the 3D perspective of the cycle stand.

(a) Complete the isometric view of the cycle stand to a scale of 1 : 5. [13]

(b) A scale model of the cycle stand is to be made from 12.5 mm thick Styrofoam.

- (i) State the scale used to make the model.
..... [1]
- (ii) Complete the table to show the processes and tools/items of equipment that would be used to make the model of the cycle stand. [3]

Process	Tools/items of equipment
marking out the shapes onto the Styrofoam	marker pen
cutting out the parts	
smoothing the edges of the pieces	
joining the pieces together	

- (iii) Explain **one** benefit of making a model of the design.
.....
.....
..... [2]

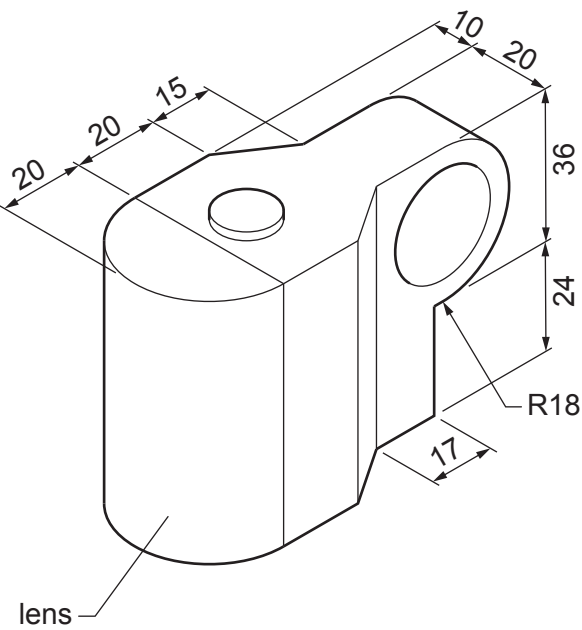
(c) A design for another cycle stand made from thin sheet metal is shown below.

The diagram shows two views of a cycle stand. The **isometric view** on the left shows a base of 260 units, with a 60-unit wide section on the left and a 60-unit wide section on the right. The height of the base is 80 units, and the vertical supports are 60 units high. The **development (net)** on the right shows the 2D layout of the sheet metal, with a 60-unit wide section on the left and a 60-unit wide section on the right. The height of the base is 80 units, and the vertical supports are 60 units high.

Complete the development (net) of the cycle stand to a scale of 1 : 4. [6]

development (net)

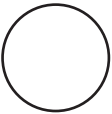
B5 A cycle light is shown below.



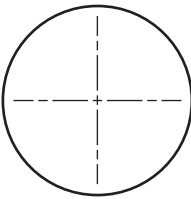
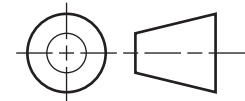
(a) Complete the full-size orthographic views of the cycle light. [11]



front view



plan



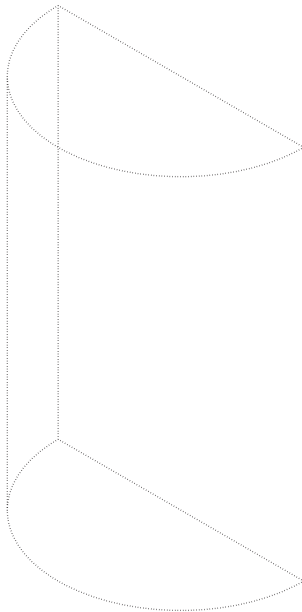
side view

(b) The lens of the cycle light is shown below.

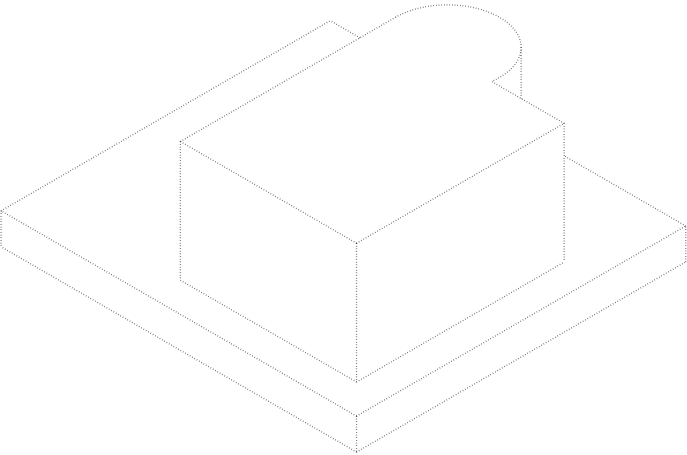
The lens is made from clear plastic.

Render the lens to look like clear plastic.

[3]



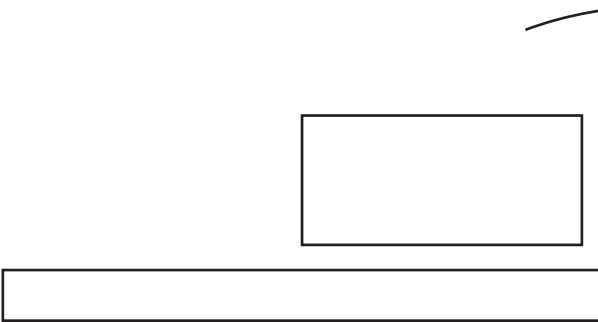
(c) A vacuum formed package for the cycle light will be made using the mould shown below.



Apply thick and thin line technique to the mould. [5]

(d) Complete the one-point perspective view of the mould. [6]

[6]



one-point perspective view