

CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

GEOMETRICAL AND MECHANICAL DRAWING 7040/2
PAPER 2 **MAY/JUNE SESSION 2002**

2 hours 40 minutes

Additional materials:

A2 drawing paper (1 sheet)
Standard drawing equipment

TIME 2 hours 40 minutes

INSTRUCTIONS TO CANDIDATES

Print your name, Centre number and candidate number at the bottom right-hand corner of your drawing paper.

Answer **both** questions.

Use both sides of the drawing paper for your answers.

INFORMATION FOR CANDIDATES

The number of marks is given in brackets [] at the end of each question or part question.

The insert contains Fig. 2 for Section 2.

You should spend 10 minutes reading carefully the text of Section 2 before answering the questions.

Arcs of circles less than 5 mm radius may be drawn freehand.

All dimensions are in millimetres unless otherwise stated.

This question paper consists of 4 printed pages and an insert.

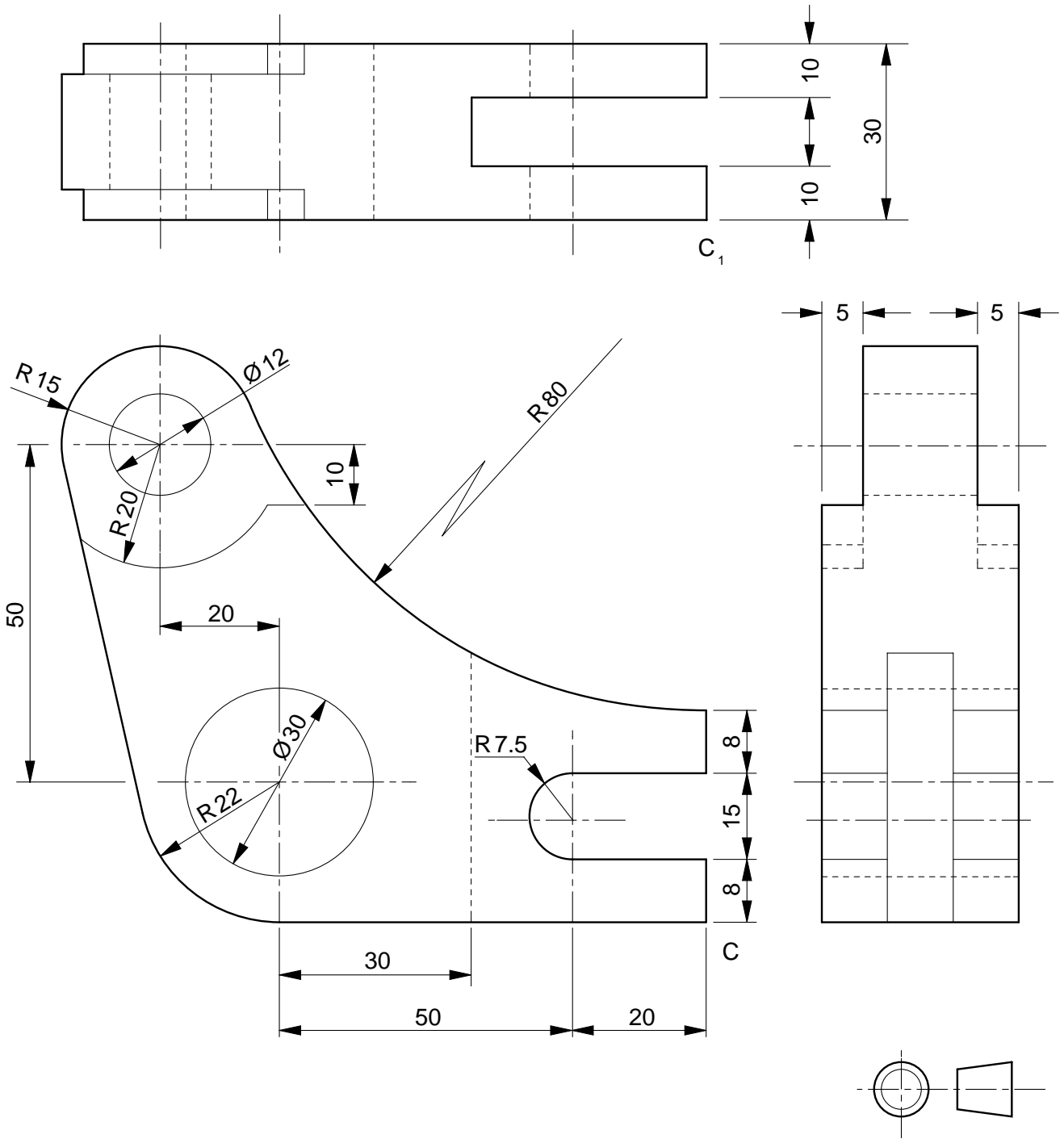


Fig.1

Section 2

- 2 Fig. 2, on the insert, shows the dimensioned components of a small bench vice, which is assembled as follows.

The Bracket ④ is fitted into the 14 mm diameter hole in the base of the Body ① and secured in position by the Bracket Screw ⑤. The Handle ⑩ is fitted through the 8 mm diameter hole in the Screw ③ and the Handle Ends ⑪ screwed on.

One of the Washers ⑧ is fitted on to the Screw until it comes up against the 20 mm diameter boss. The Screw is fitted through the 12 mm diameter hole in the Sliding Jaw ②, until the Washer is in contact with the face of the Sliding Jaw. The second Washer ⑧ is fitted over the Screw until it is in contact with the inside face of the Sliding Jaw.

The Washer Pin ⑨ is pressed into the 6 mm diameter hole in the screw to retain its position in the sliding jaw. The two Jaws ⑥ are fitted into the 3 mm recesses in the top of the Body and Sliding Jaw, and secured in position by the Jaw Screws ⑦.

The Sliding Jaw assembly is inserted into the Body until the Screw engages with the thread in the Bracket. When the screw is turned the Sliding Jaw moves along the Body progressively closing the jaws.

DO NOT COPY THE GIVEN DETAILS, but draw full size in either, first or third angle projection:

- (a) A fully assembled sectional elevation of the vice with the jaws 20 mm apart. The plane of the section, and the required view, to be along the centre line of the Body as indicated by the **X-X** line on the plan view of the body. [42]
- (b) An end view of the assembly, looking in the direction of the arrow **A**. [15]
- (c) A plan view. [17]

Do not show any hidden detail in these views.

Suitable dimensions should be estimated where not provided.

- (d) (i) Insert the following dimensions:

two horizontal dimensions;

two vertical dimensions;

a diameter;

a radius;

detail of a screw thread.

- (ii) On the same side of the paper showing these views, draw a title block.

Print in this block your name, examination number, title and the scale used.

Indicate in accordance with BSS308/PD7308, the recommended symbol for the method of projection you have used. [10]