

CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

GEOMETRICAL AND MECHANICAL DRAWING

7040/02

Paper 2

May/June 2003

2 hours 40 minutes

Additional Materials: A2 drawing paper (1 sheet)
Standard drawing equipment

READ THESE INSTRUCTIONS FIRST

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

Use both sides of the paper.

Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **both** questions.

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 document consists of 4 printed pages and an insert.



Section 1

Candidates are advised to spend not more than 20 minutes on this section.

- 1 Fig. 1 shows an angle bracket, drawn in first angle projection. Make a freehand pictorial sketch of this component, approximately full size and in good proportion, with C as the lowest point in the foreground.

The use of instruments, including any form of straight-edge, when preparing the sketch or when lining in, will be severely penalised.

Faint construction lines and points used in preparing the sketch should not be erased. [16]

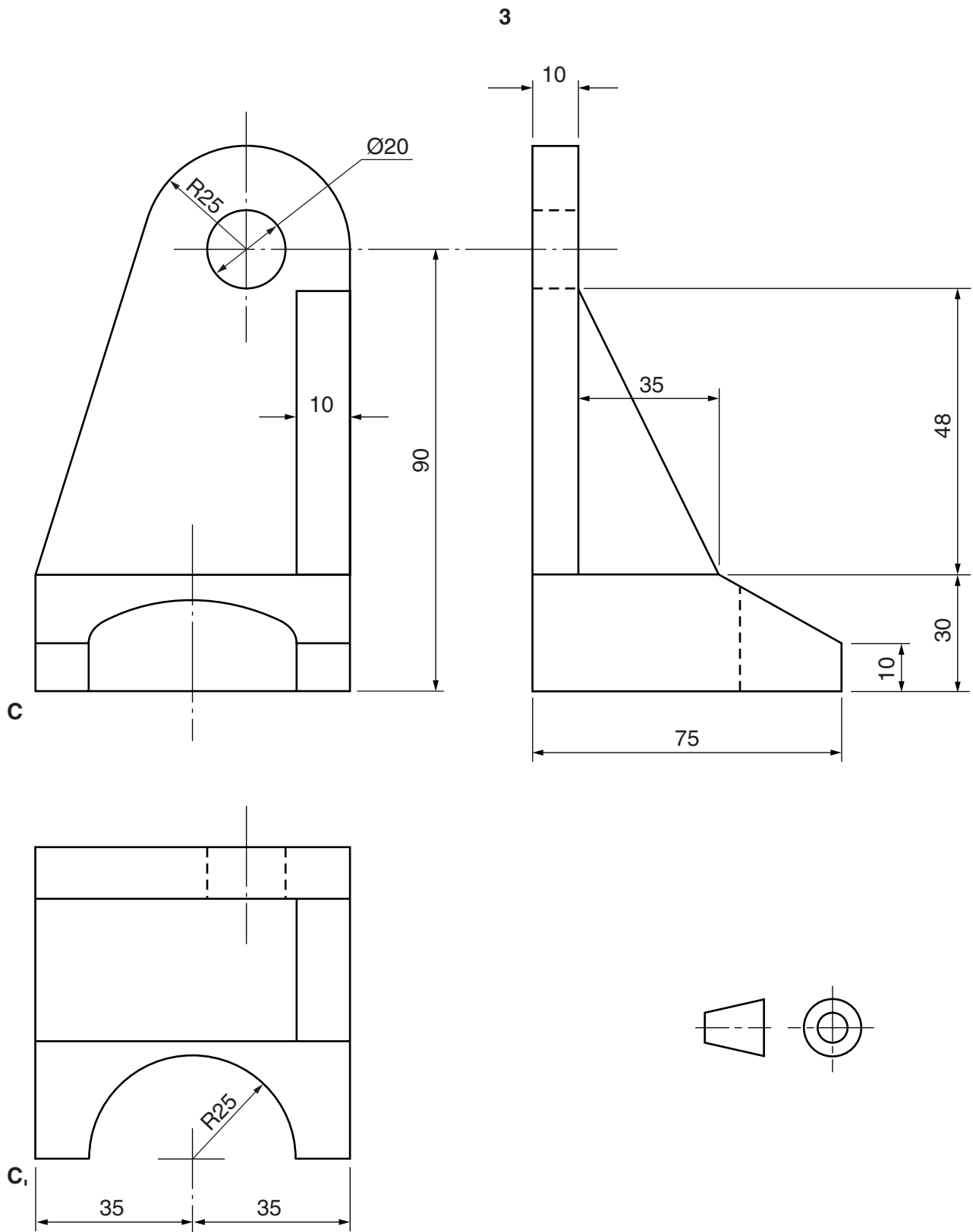


Fig. 1

Section 2

- 2 Fig. 2, on the insert, shows details of the component parts of a Bearing Bracket. The components are assembled as follows:

The two Studs ④ are screwed fully into the M12 x 1.75 tapped holes in the top of the Bracket ③.

The complete Split Bearing ① is fitted into the R28 mm semi-circular hole in the top of the Bracket, with the 16 mm diameter boss uppermost.

The Cap ② is fitted on to the top of the Bracket and located into the 80 mm x 4 mm recess in the top of the Bracket.

The Cap is secured in position by fitting the Washers ⑤ and the Nuts ⑥ on to the Studs until they are tight against the Cap.

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

- (a) A fully assembled sectional elevation. The plane of the section and the direction to be viewed to be on the centre line of the Bracket and Cap as indicated by the line E—E. [36]
- (b) A fully sectional end elevation. The plane of the section and the direction to be viewed to be on the centreline on the Bracket and Cap as indicated by the line X—X. [21]
- (c) A plan view in projection from (a). [17]

Do not show hidden detail in any view.

Suitable dimensions should be estimated where not provided.

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

two vertical dimensions;

two horizontal dimensions;

a diameter;

a radius;

detail of a screw thread.

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

Print in this title block your name, the name of the bearing, and the scale used.

Indicate in accordance with BSS308/PP7308, the symbol for the method of projection you have used. [10]