higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

ENGINEERING GRAPHICS AND DESIGN
(Second paper**)**
NQF LEVEL 3

(6021029)

16 March 2020 (X-paper)
09:00–13:00

REQUIREMENTS: **A2 Drawing Sheet**
Drawing Instruments

This question paper consists of 4 pages and 5 diagram sheets.

577Q2S2016

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TIME: 4 HOURS
MARKS: 100

INSTRUCTIONS AND INFORMATION

1. Answer all the questions.
2. Read all the questions carefully.
3. Number the answers according to the numbering system used in this question paper.
4. Use both sides of the drawing sheet.
5. A 20 mm border must be drawn on both sides of the drawing sheet.
6. All drawings, including the candidates' information, must be done in pencil.
7. A balanced layout is important. Candidates will be penalised for poor planning.
8. A radius curve stencil may be used to draw arcs.
9. Use your own discretion where dimensions are not given.
10. All drawing work must conform to the latest SABS 0111 Code of Practice for Engineering Drawing.
11. Print neatly and legibly.

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QUESTION 1

FIGURE 1, DIAGRAM SHEET 1 (attached) shows a table.

1.1 Draw the table, shown on DIAGRAM SHEET 1 and print the answers to the following questions, using 3 mm lettering. (2)

1.2 1.2.1 State the height of the lettering in the title block.

1.2.2 State TWO applications of 0,5 mm thick, continuous black lines in engineering drawings.

1.2.3 State TWO applications of 0,3 mm thin, continuous black lines in engineering drawings.

1.2.4 State TWO applications of 0,3 thin, black chain lines in engineering drawings.

(4 × 2) (8)

[10]

QUESTION 2

FIGURE 2, DIAGRAM SHEET 2 (attached) shows TWO views of a machined part in first-angle orthographic projection.

DO NOT COPY THE GIVEN VIEWS.

2.1 Construct an isometric scale. (2)

2.2 Draw an isometric view of the machined part using the isometric scale, in first-angle orthographic projection. 'A' must be the lowest point of the isometric drawing. No hidden detail required. (13)

[15]

QUESTION 3

FIGURE 3, DIAGRAM SHEET 3 (attached) shows a round to rectangular transition pipe, with both ends open.

3.1 Draw the given views using a scale of 1:1 (4)

3.2 Develop the surface of the transition pipe (13)

[17]

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QUESTION 4

FIGURE 4, DIAGRAM SHEET 4 (attached) shows TWO views of a coupling, in first angle orthographic projection.

Draw detailed drawings of the following items, using a scale of 1:1.

4.1 A full sectional front view of item 1 (15)

4.2 A top view of item 1 (9)
[24]

QUESTION 5

FIGURE 5, DIAGRAM SHEET 5 (attached) shows the components of a distribution box lock, in third angle orthographic projection. The parts list is as follows:

ITEM	NAME	NO PER ASSY
1	Base	1
2	Shaft	1
3	Seal	1
4	Locking Lever	1
5	Washer	1
6	M12 Nut	1
7	Guide Pin	1

5.1 Draw an assembly drawing, according to scale 2:1, a full sectional front view. (25)

5.2 Insert the item numbers on the assembly drawing (7)

5.3 Insert the title and scale, centrally, below the assembly drawing (2)
[34]

TOTAL: 100

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DIAGRAM SHEET 1

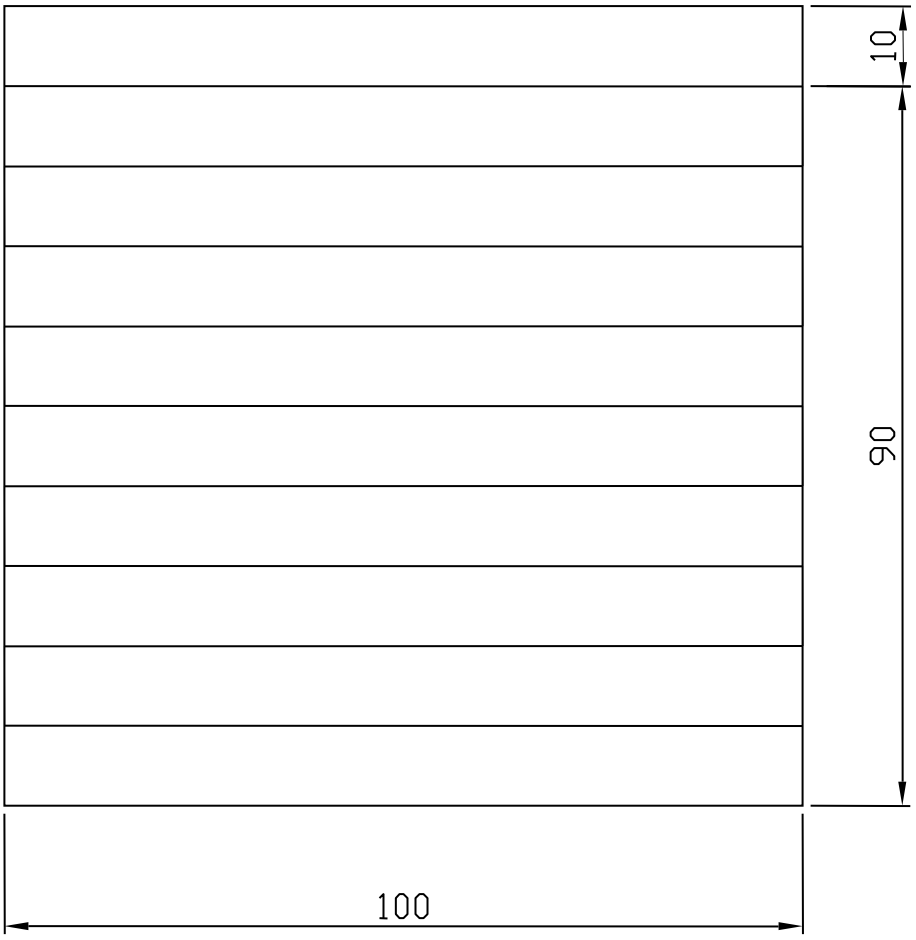


FIGURE 1

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DIAGRAM SHEET 2

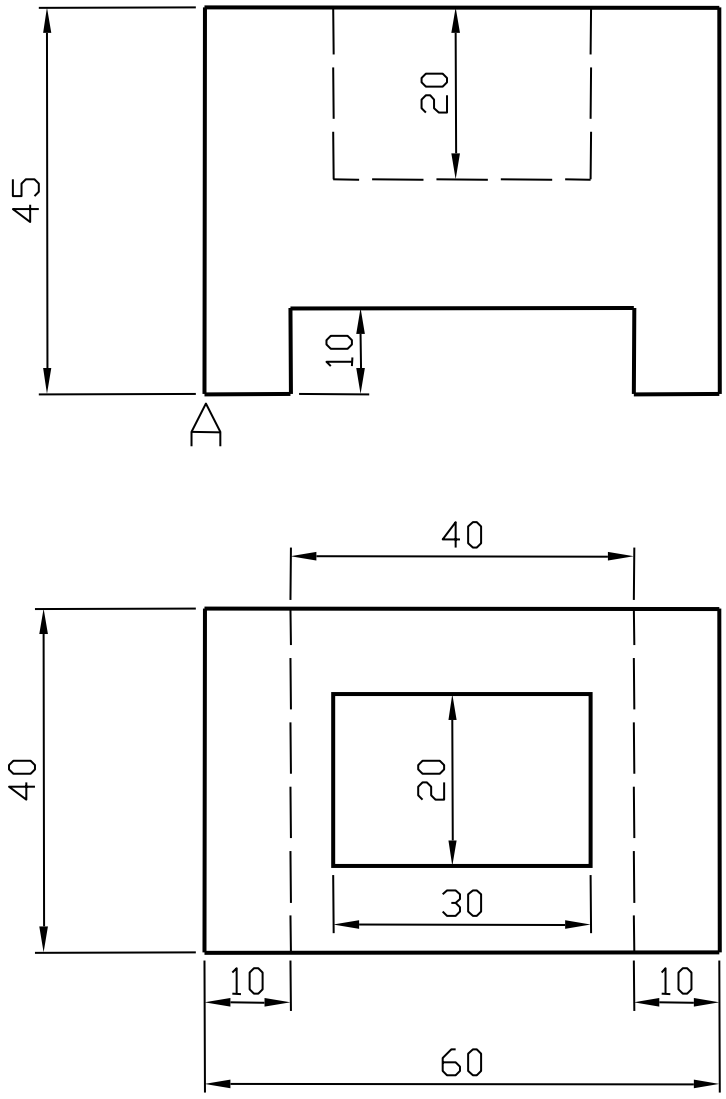


FIGURE 2

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DIAGRAM SHEET 3

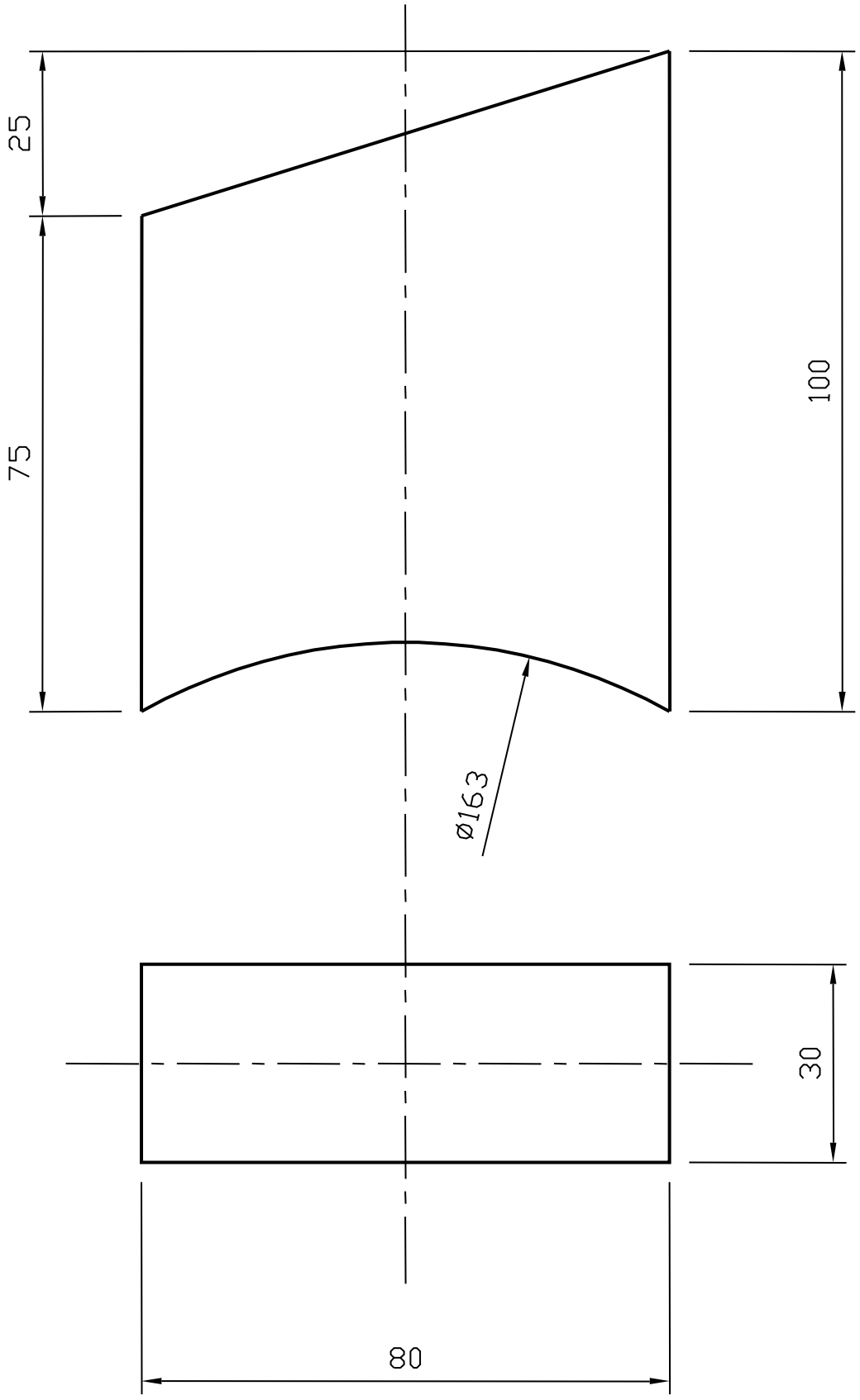


FIGURE 3

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DIAGRAM SHEET 4

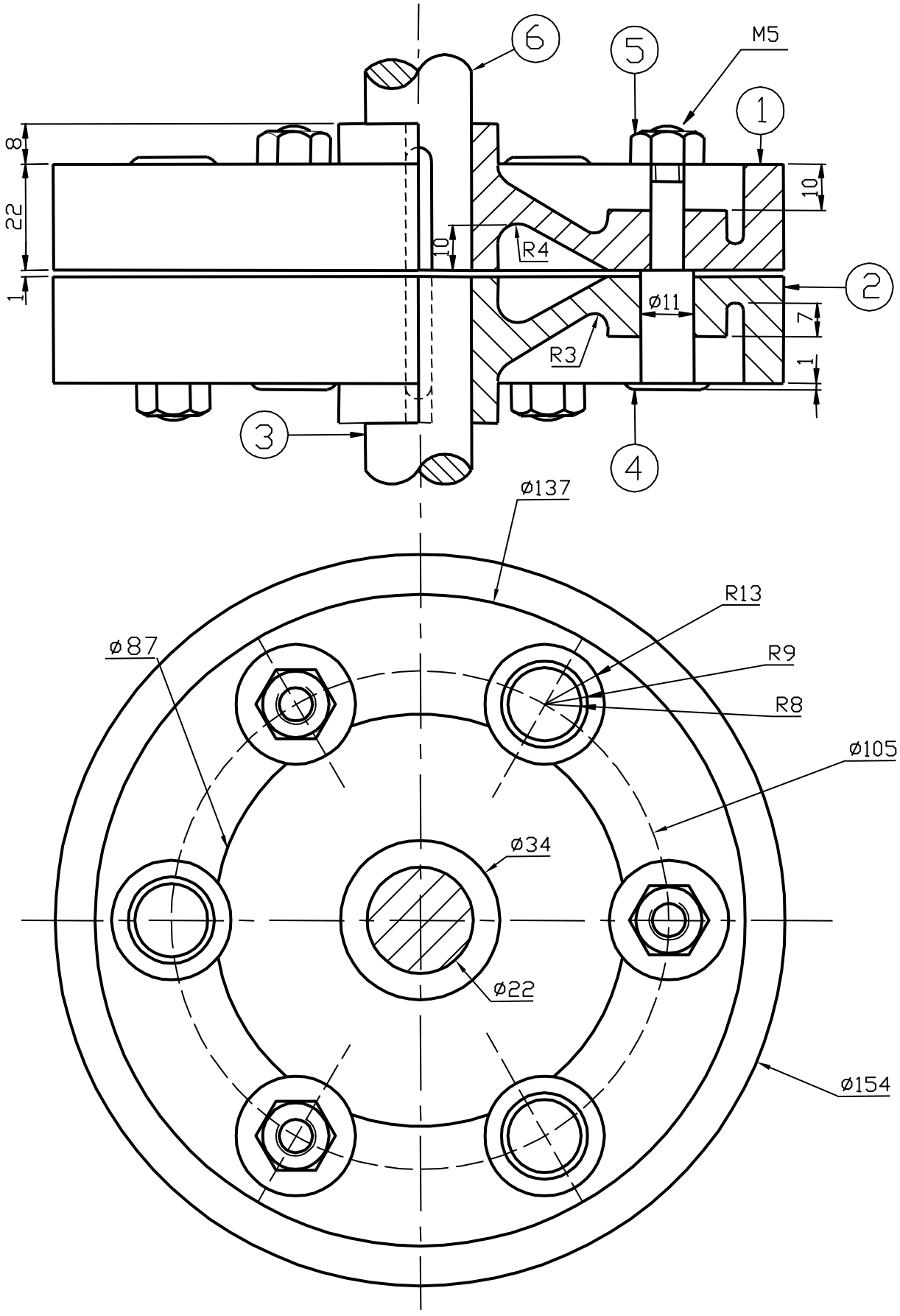


FIGURE 4

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DIAGRAM SHEET 5

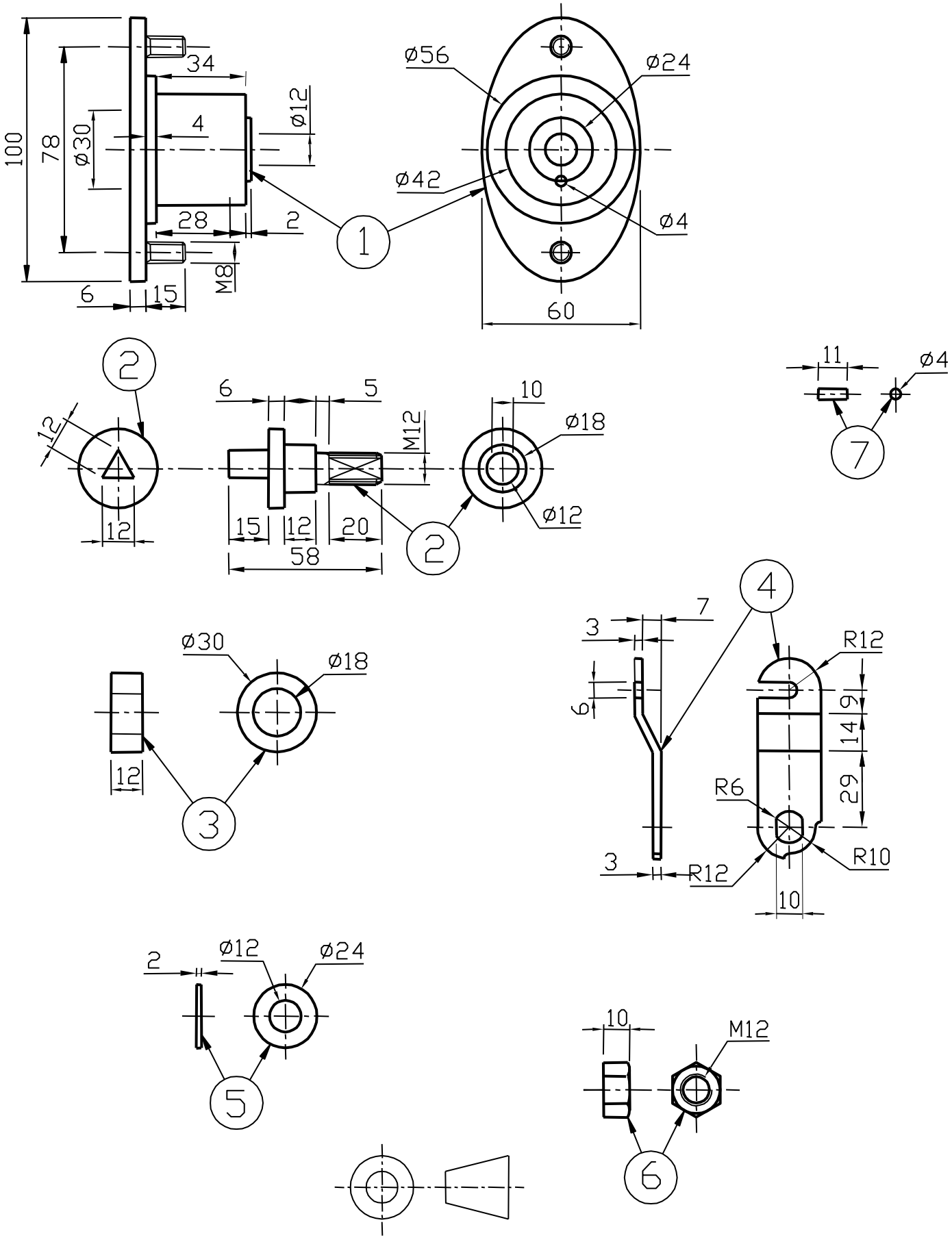


FIGURE 5

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