

# JUNIOR LYCEUM ANNUAL EXAMINATIONS 2007

Educational Assessment Unit – Education Division

**FORM 4 (2<sup>nd</sup> year)**

**TECHNICAL DESIGN**

**Time 2 hours**

## Instructions

- Write your name and class on all sheets.
- Attempt ALL questions.
- All answers are to be drawn accurately, with instruments, unless otherwise stated.
- All construction lines **MUST** be left on each solution to show the method employed.
- Drawing aids may be used.

## Information

- All dimensions are in millimetres.
- Estimate any missing dimensions not given.
- Marks will be awarded for accuracy, clarity and appropriateness of construction.

NAME \_\_\_\_\_

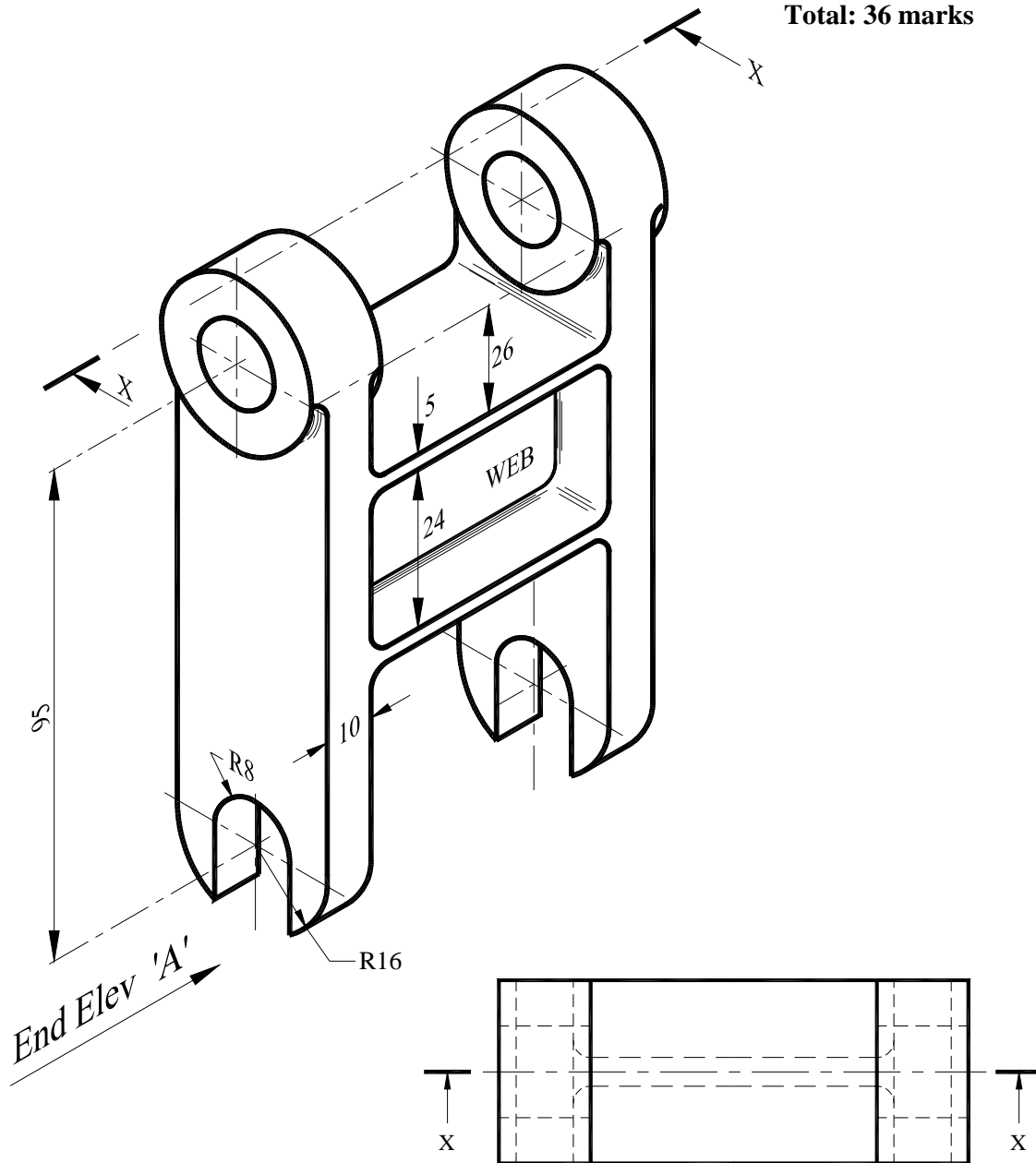
CLASS \_\_\_\_\_

Question	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Max. mark	<b>36</b>	<b>16</b>	<b>18</b>	<b>12</b>	<b>18</b>
Mark					

1. The figure below shows an isometric view and a plan of a **CONNECTING LINK**

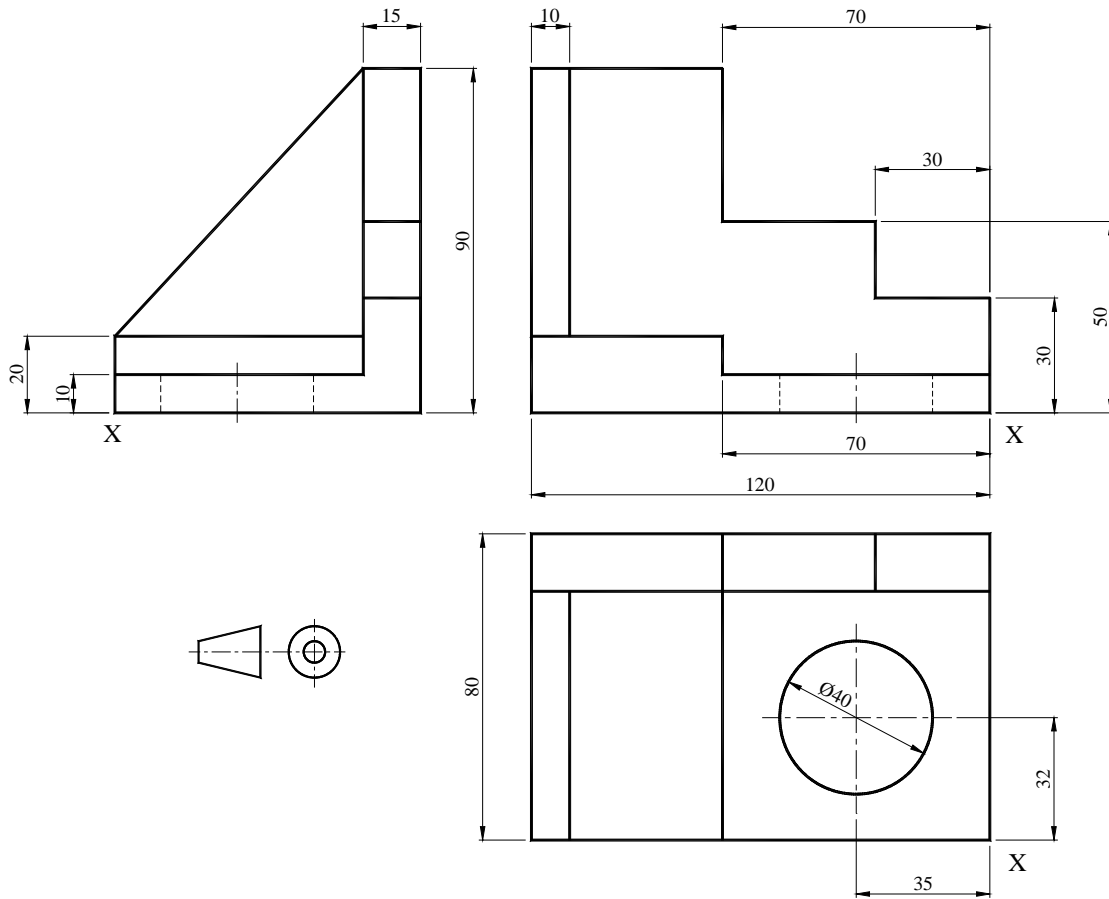
- (a) Draw, using first angle projection, the following views
- (i) a sectional front elevation on plane **X - X** 18 marks
  - (ii) a complete end elevation as seen from **A** 14 marks
- (b) Add the following to your drawing
- (i) the appropriate symbol to indicate the projection angle 4 marks
  - (ii) the scale

**Total: 36 marks**



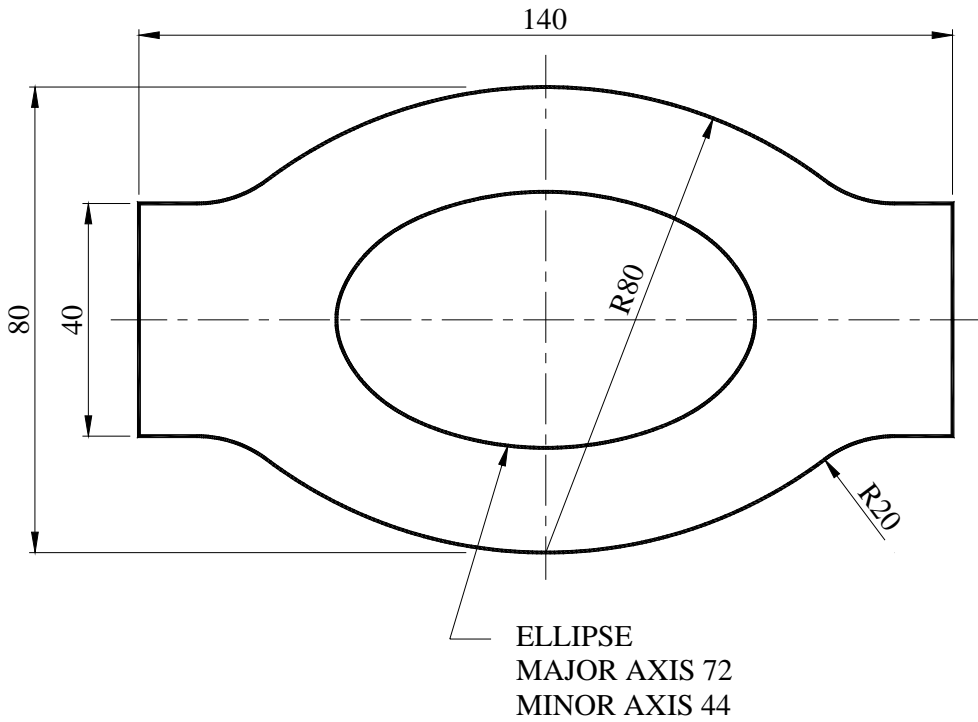
2. The figure below shows in first angle orthographic projection three views of an **Angle Block** which is part of a measuring instrument.  
 Draw an Isometric view of the component, positioning corner 'X' in the foreground.

16 marks



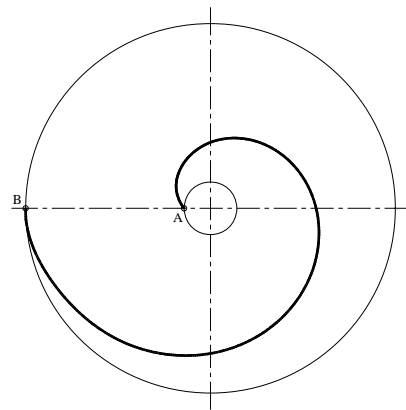
3. The plan view of a stainless steel tray is given below.  
 Draw, full size, the **upper half** of the given plan showing all construction lines. The ellipse may be drawn by any accurate method.  
**Note:** (i) the drawing below is not drawn to scale  
 (ii) you are to draw only, **half** of the given plan.

18 marks



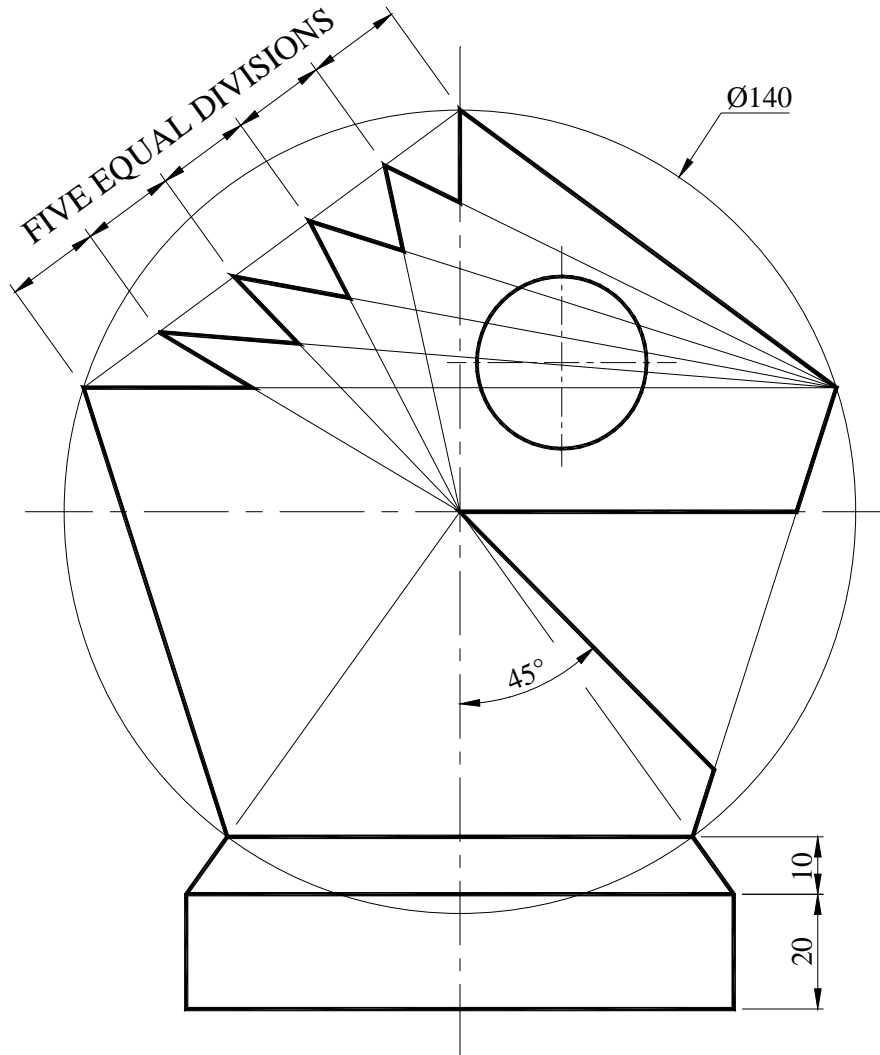
4. The figure shows a spring attached to a shaft at point **A**. The spring takes the form of an Archimedean Spiral.  
 On the centre – lines given draw the spring, starting from the point marked **A** and ending on the centre – line at point **B**.

12 marks

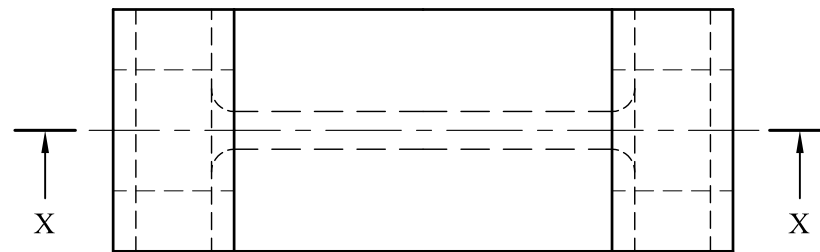
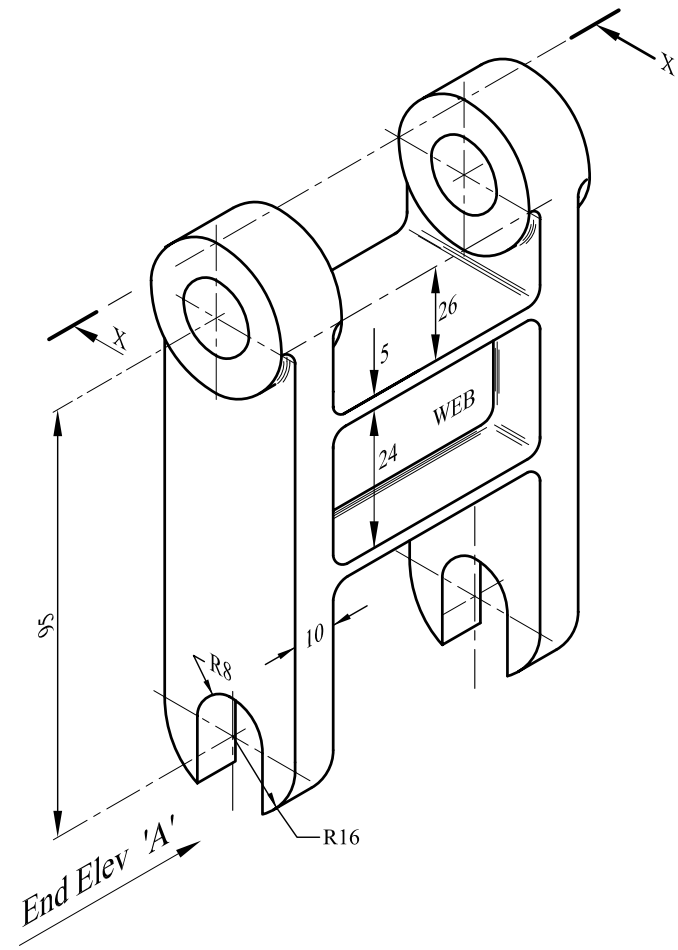


5. The drawing shows the side view of a CHESS PIECE which is based on a regular PENTAGON.
- Using the given centre lines draw a circle of 140mm diameter and construct the regular pentagon.
  - Complete the outline of the piece clearly showing your construction for:
    - the five equal divisions
    - the 45° angle

**Total 18 marks**



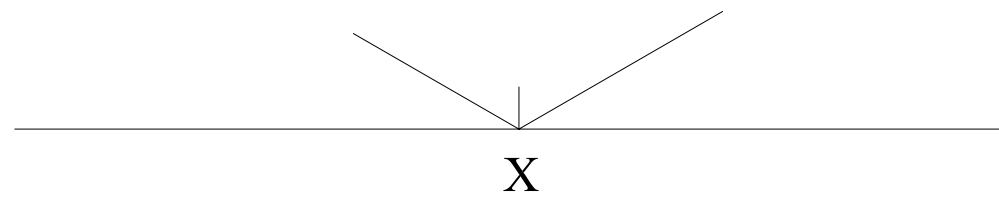
QUESTION No.1



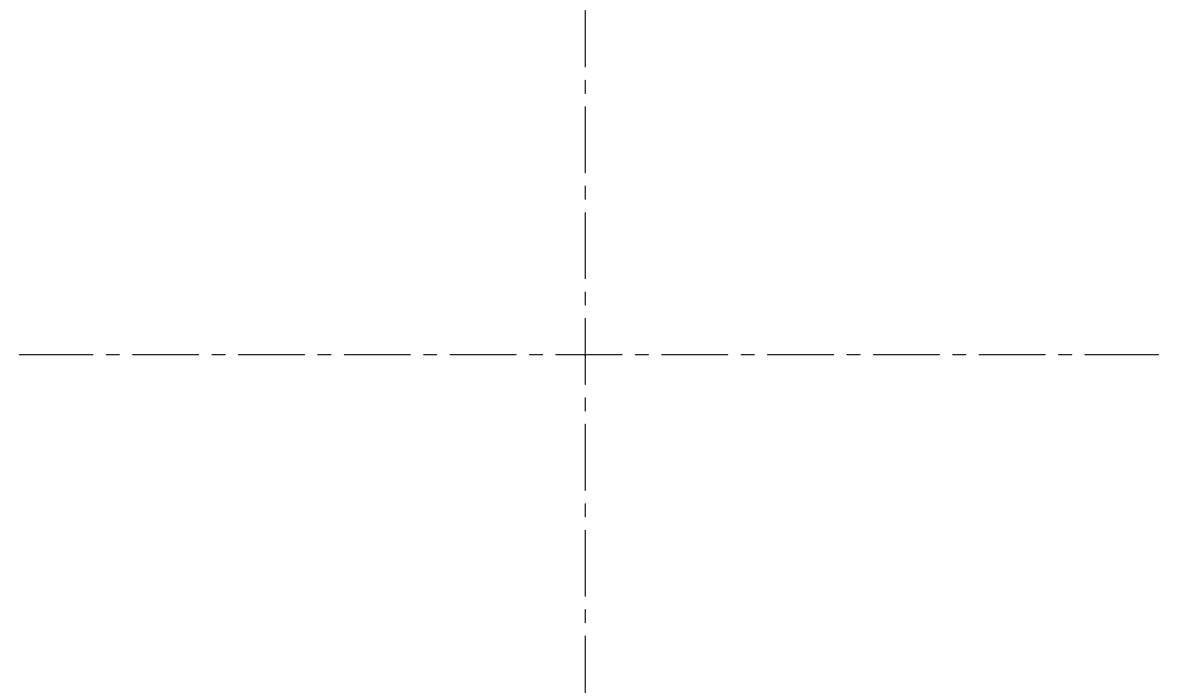
ALL FILLET RADII 3mm

PLAN

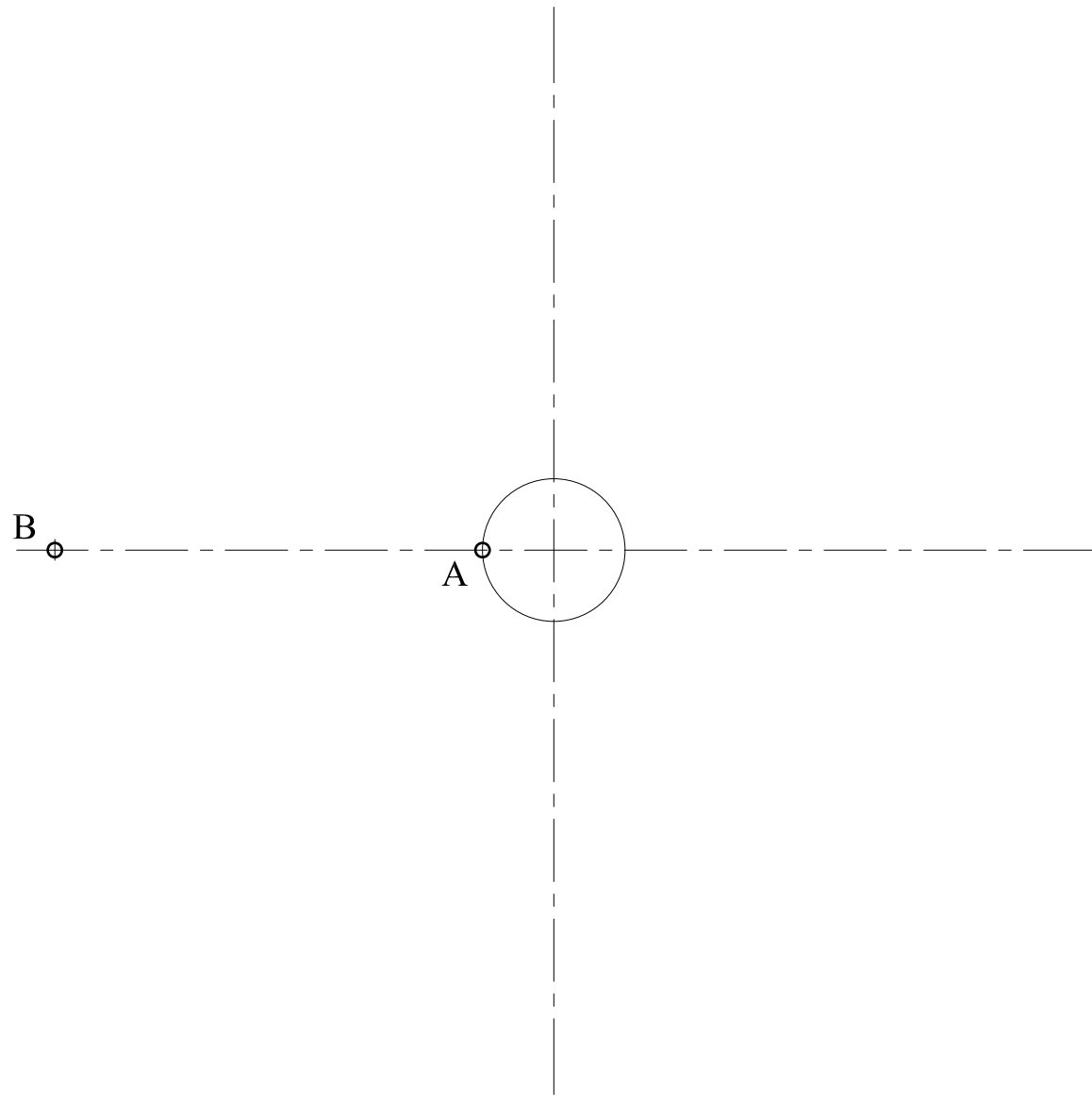
QUESTION No.2



QUESTION No.3



QUESTION No.4



QUESTION No.5

