

JUNIOR LYCEUM ANNUAL EXAMINATIONS 2007

Educational Assessment Unit – Education Division

FORM 4 (4th 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 _____

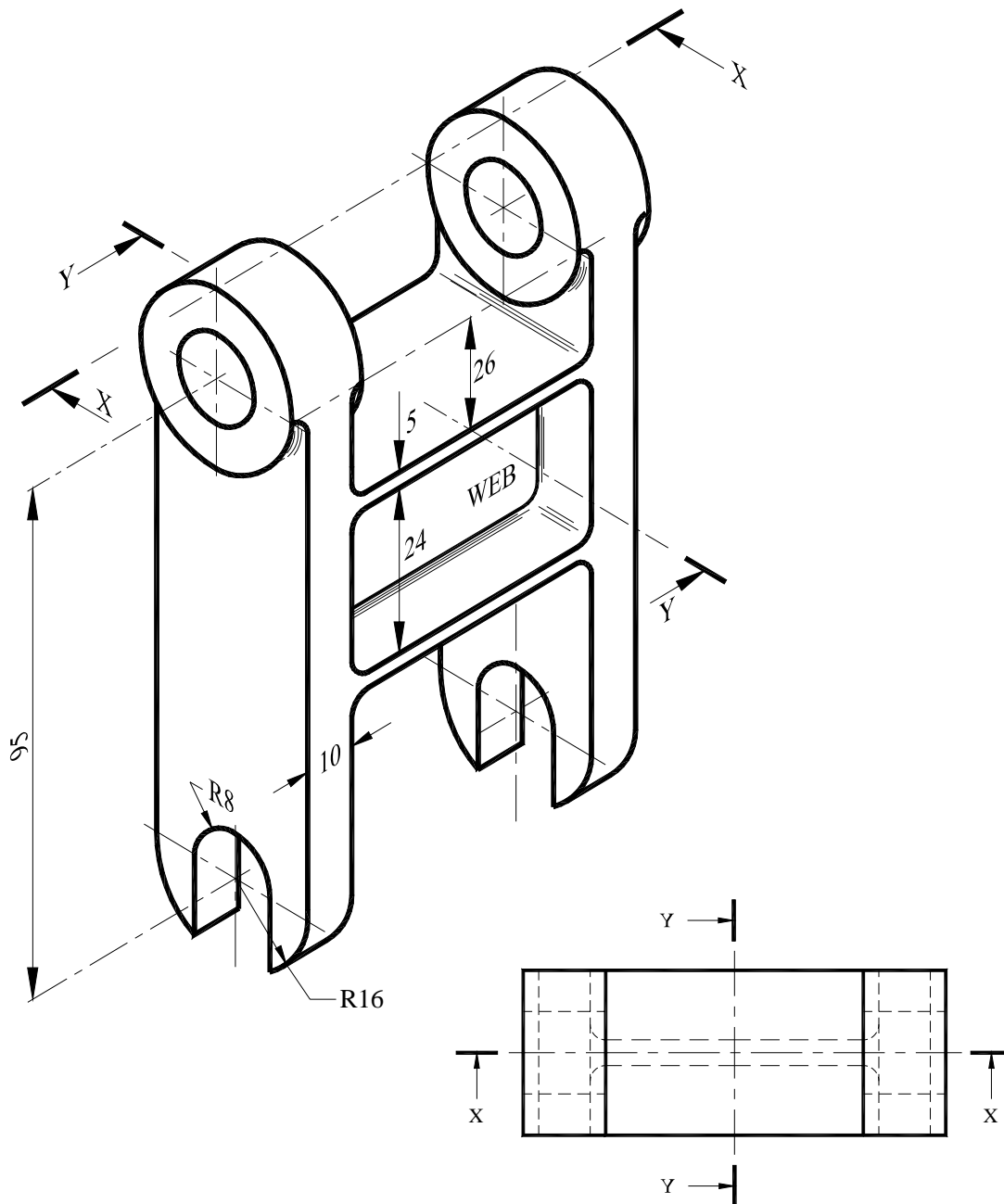
CLASS _____

Question	1	2	3	4	5
Max. mark	36	16	18	12	18
Mark					

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

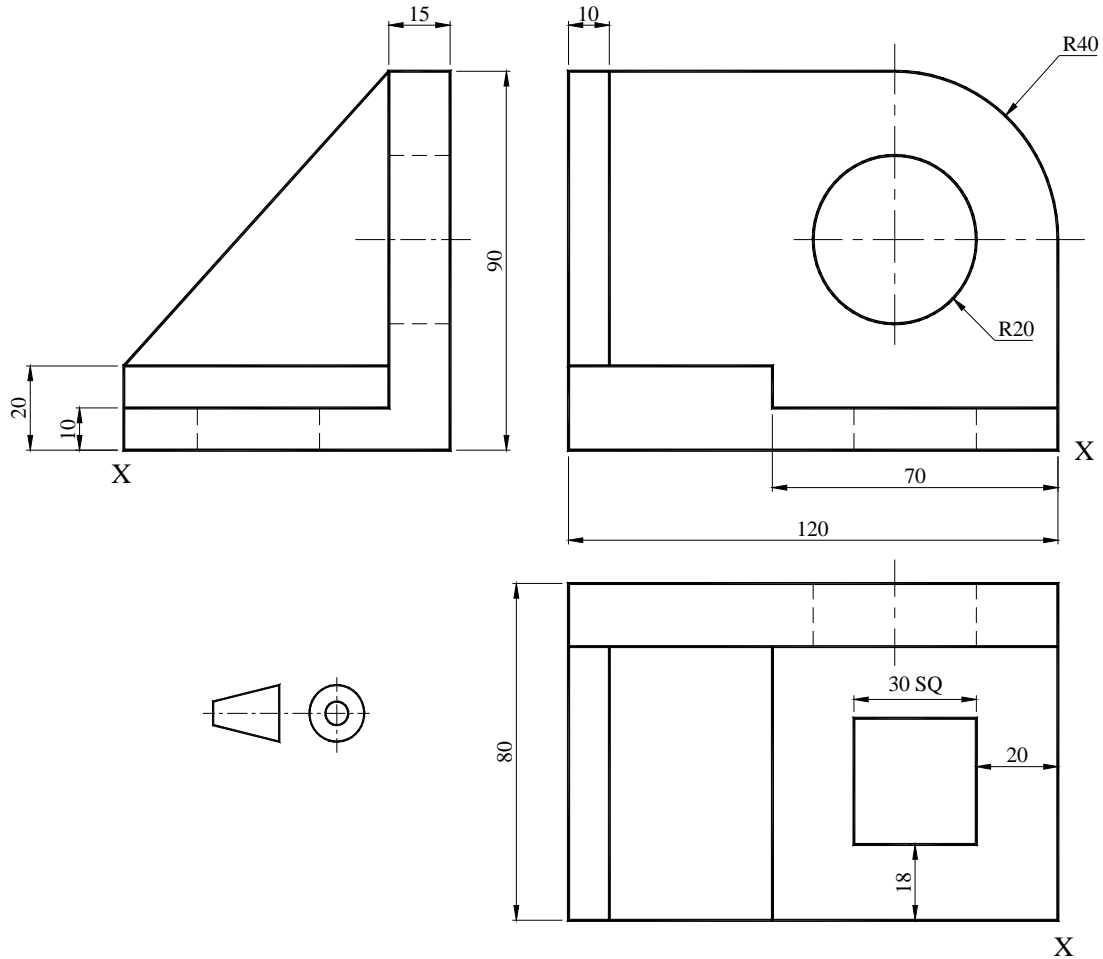
- (a) Draw, using first angle projection, the following views
- (i) a sectional front elevation on plane **X - X** 18 marks
 - (ii) a sectional end elevation on cutting plane **Y - Y** 14 marks
- (b) Add the following to your drawing
- (i) the appropriate symbol to indicate the projection angle
 - (ii)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

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.

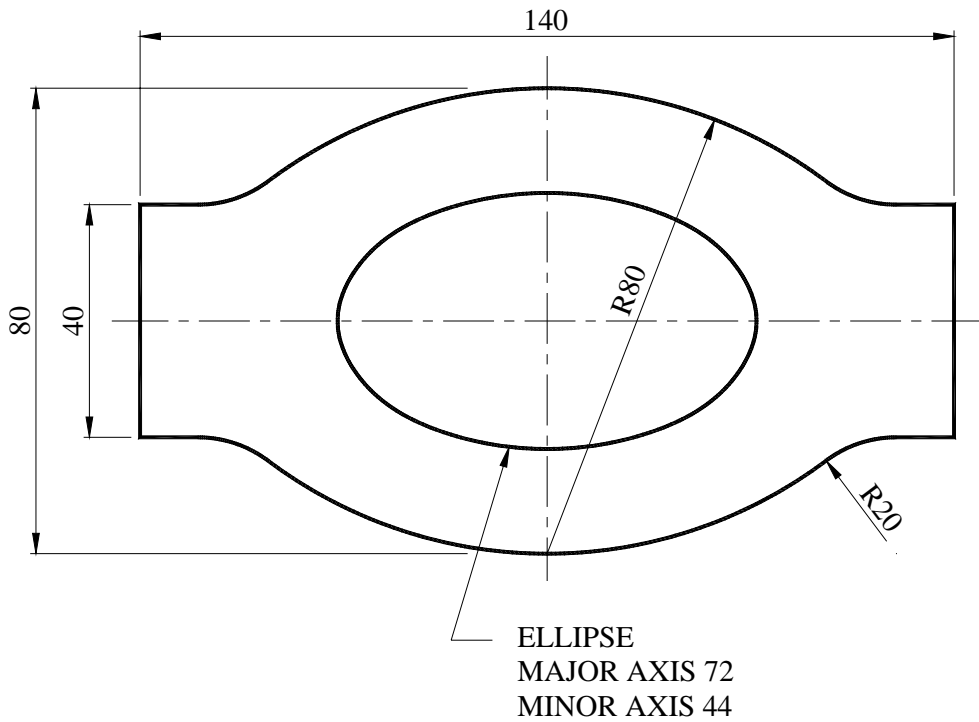
16 marks



3. The plan view of a stainless steel tray is given below. Draw, full size, the given plan showing all construction lines. The ellipse may be drawn by any accurate method.

Note: the drawing below is not drawn to scale.

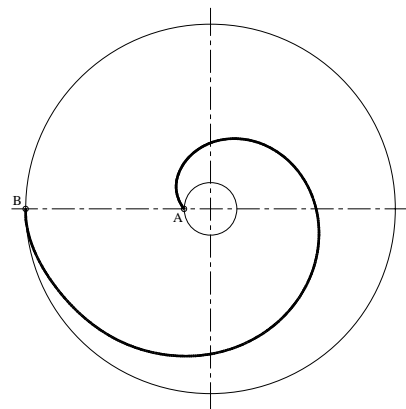
18 marks



4. The figure shows a spring attached to a shaft at point **A**. The spring takes the form of an Archimedean Spiral.

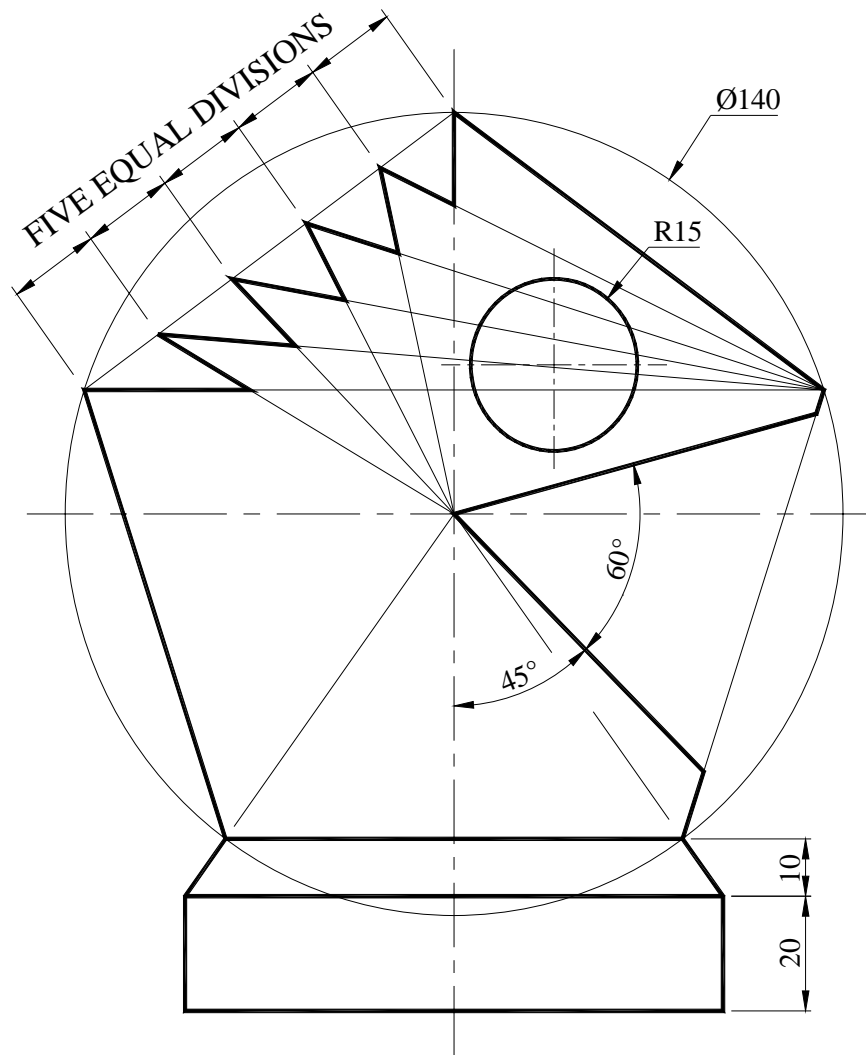
On the centre – lines given draw the spring, starting from the point marked **A** and ending on the centre – line at point **B**.

12 marks

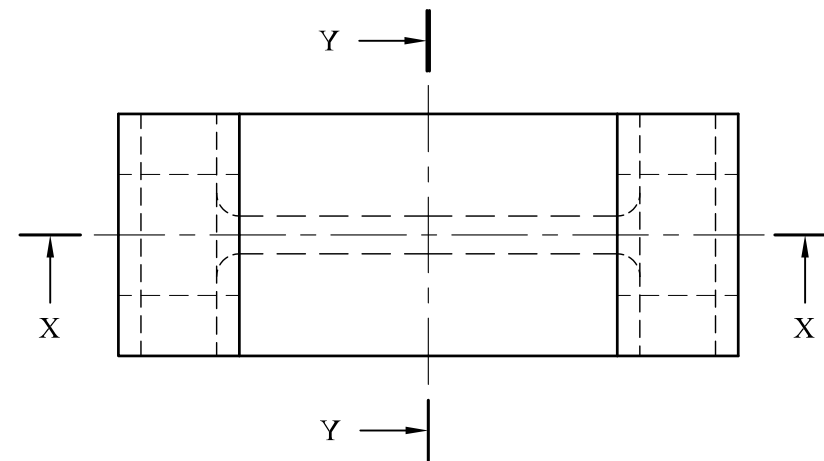
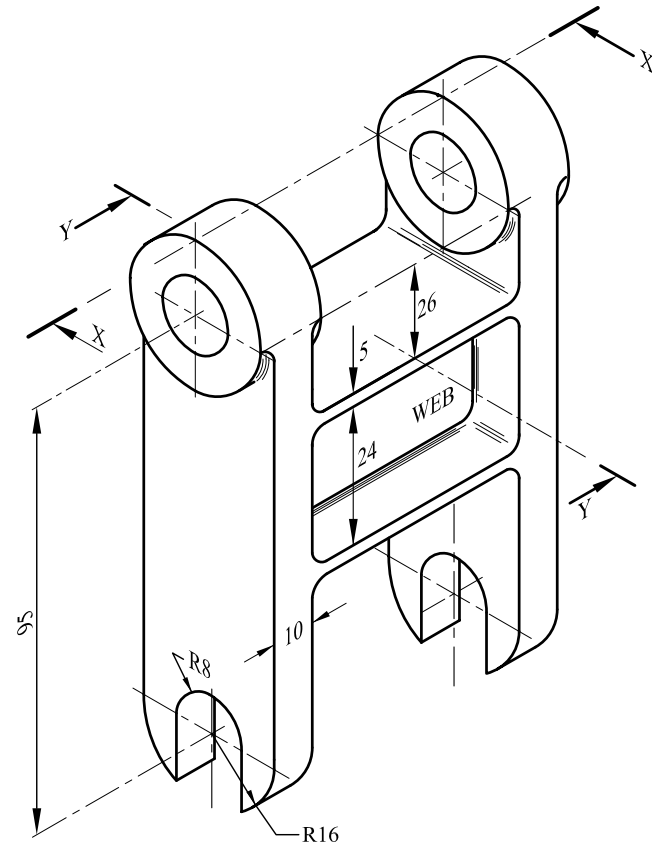


5. The drawing shows the side view of a CHESS PIECE which is based on a regular PENTAGON.
- Using the given centre lines draw a circle of 140mm diameter and construct the regular pentagon.
 - Complete the outline of the piece clearly showing your construction for:
 - the five equal divisions
 - the 45° and the 60° angles

Total 18 marks

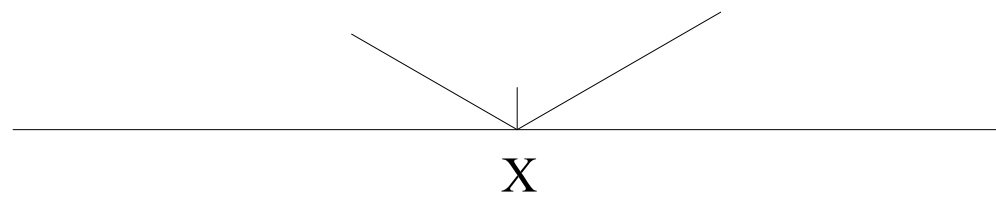


QUESTION No.1

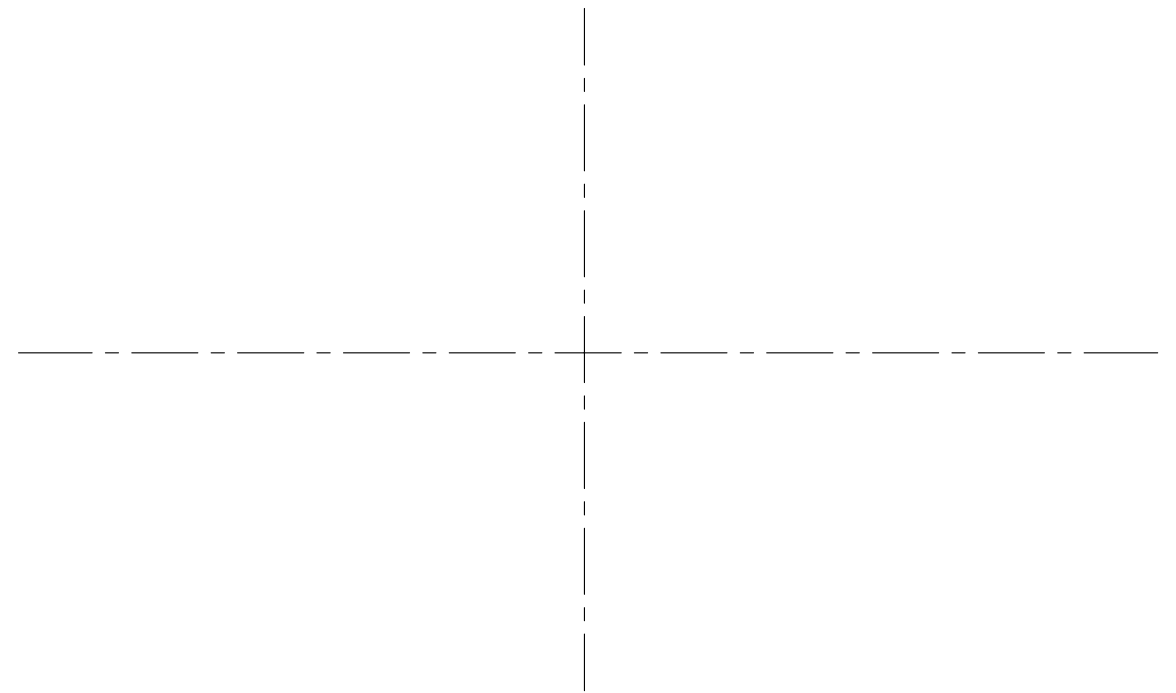


ALL FILLET RADII 3mm

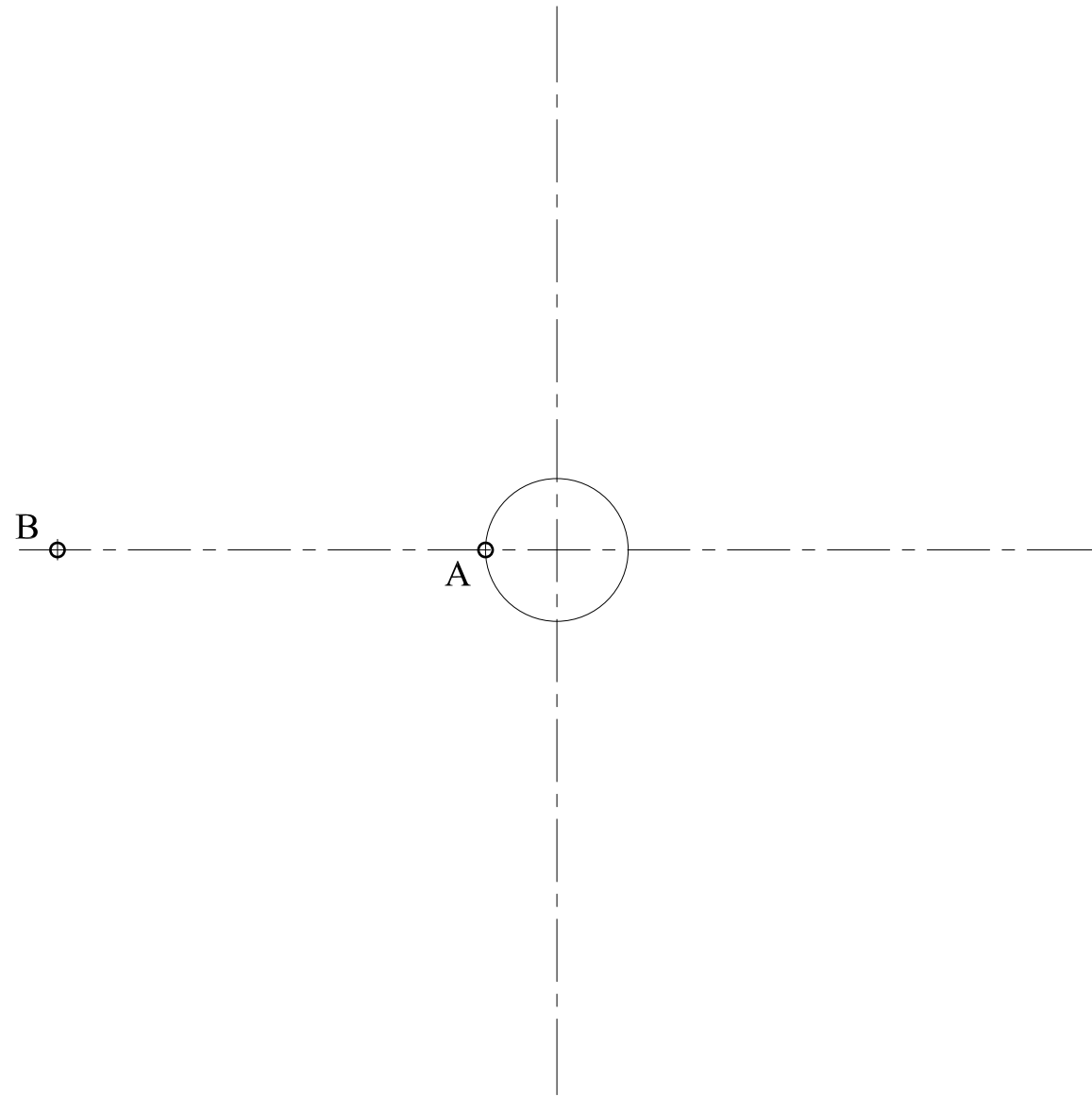
QUESTION No.2



QUESTION No.3



QUESTION No.4



QUESTION No.5

