

SHEET 1

PENANG SANGAM HIGH SCHOOL
 YEAR 11
 TECHNICAL DRAWING
 WORKSHEET – 4

QUESTION 1

[15 marks]

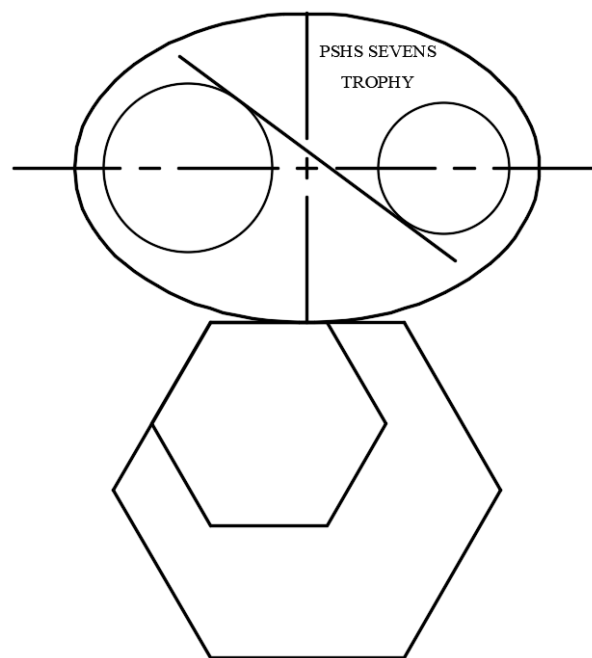
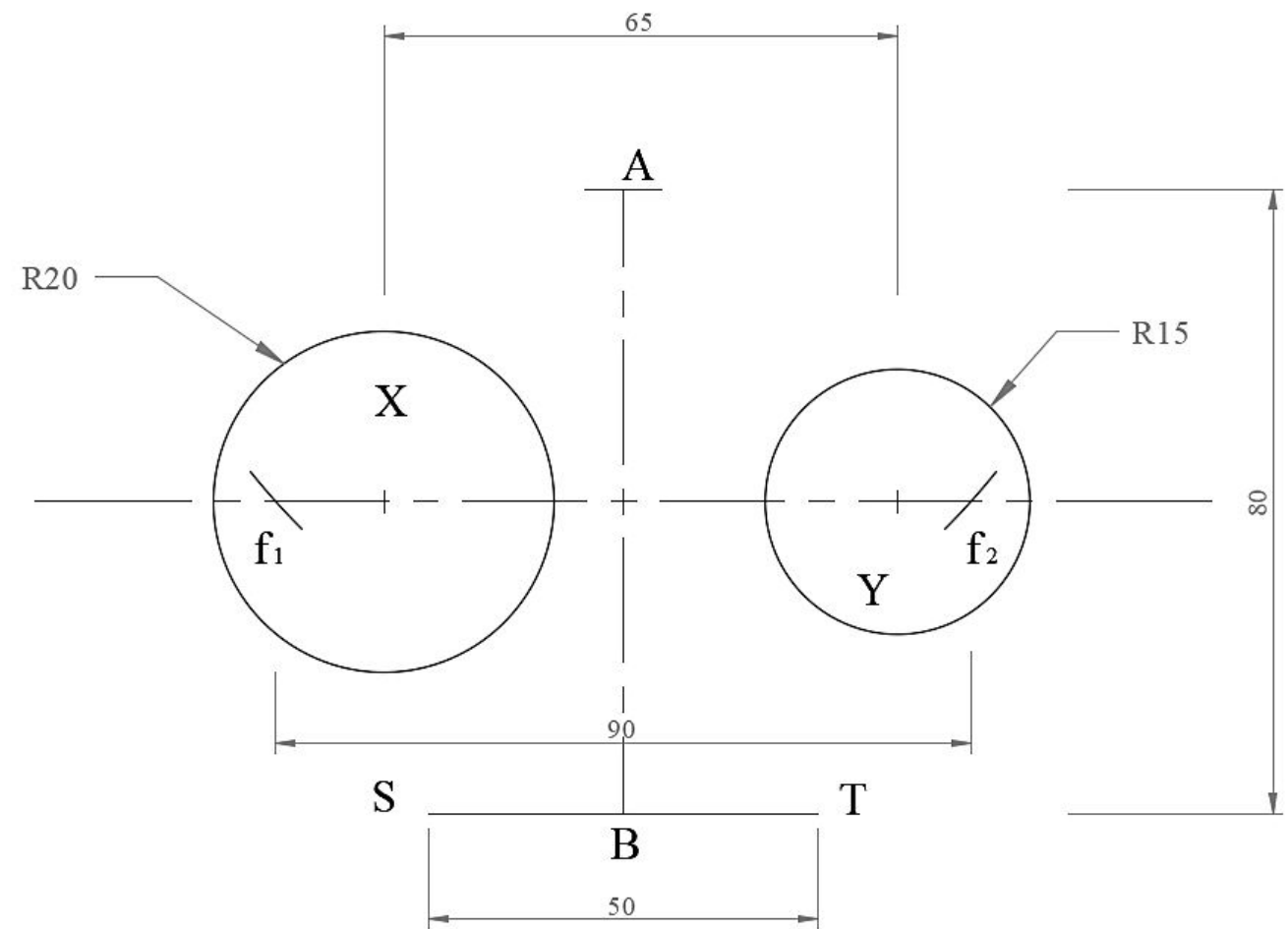
Given:

- (i) Figure 1 below shows the design of the PSHS Sevens Trophy for the 2022 rugby competition. The trophy consists of an elliptical shaped ball, two unequal circles design and a solid stand with a hexagonal shaped end.
- (ii) Line AB is the minor axis of the ellipse.
- (iii) Line ST is one side of the regular hexagon.
- (iv) The two focal points f_1 and f_2 .

Required:

Using geometrical constructions, complete the following:

- (a) Locate the centre of circles X and Y. **(2 marks)**
- (b) Find the major axis CD. **(2 marks)**
- (c) Construct the elliptical shaped ball. **(3 marks)**
- (d) Construct the hexagonal shaped end of the stand. **(2 marks)**
- (e) Redraw the hexagonal shaped end reduced to the ratio of 3:5 to match the design as shown in Figure 1. **(3 marks)**
- (f) Construct the tangential line between circles X and Y as illustrated in the given sketch. **(2 marks)**
- (g) What type of tangent is represented by this line? _____ **(1 mark)**



NOTE

Please note that the **dimensions** on the drawings are given for reference purpose i.e. students can use the given dimensions and redraw on a separate worksheet **if not** then the students can directly do the solution on **this same** drawing question/ sheet.

QUESTION 2

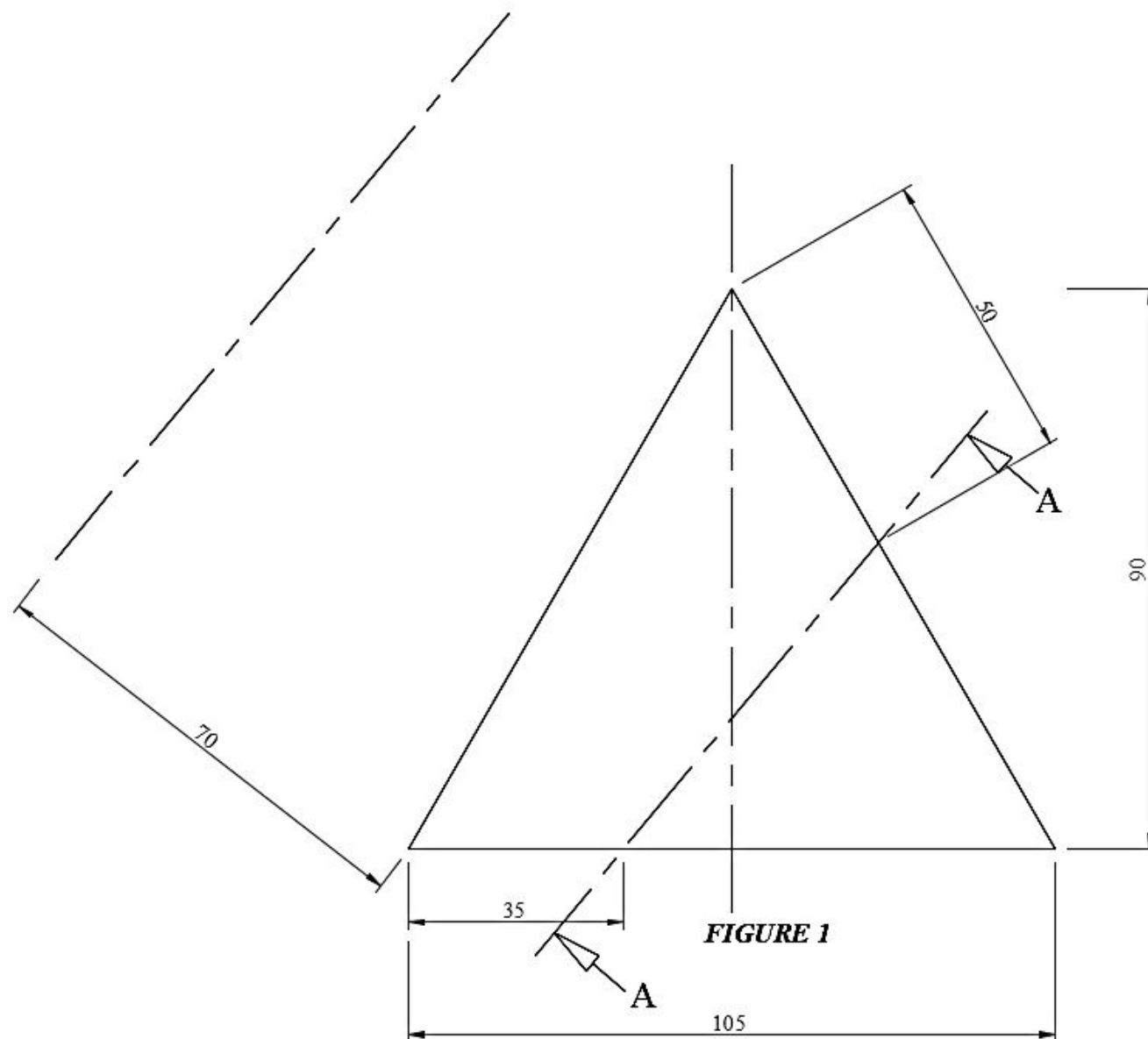
[15 marks]

(a) In Figure 1 below, a section of a cone is formed by the cutting plane AA.

Required:

- (i) Draw the conic section on the centre line AA. **(6 marks)**
- (ii) Name the conic section. **(1 mark)**
- (iii) Label the vertex, focus and directrix. **(3 marks)**

Name of the section: _____



(b) In Figure 2 below, lines **KL** and **MN** are asymptotes of a curve. P is a point on the curve.

Required:

- (i) Construct the curve. **(4 marks)**
 - (ii) Name the curve. **(1 mark)**
- Name of the curve: _____

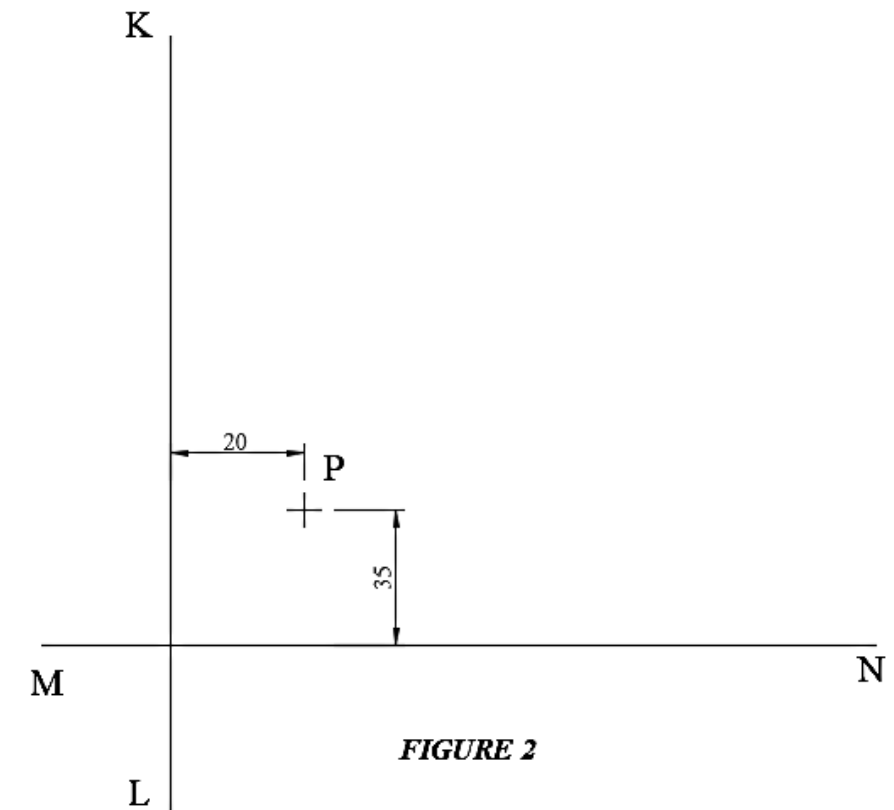


FIGURE 2

NOTE

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