PENANG SANGAM HIGH SCHOOL

P. O. BOX 44, RAKIRAKI
LESSON NOTES - 18

SCHOOL: PENANG SANGAM HIGH   **SUBJECT: TECHNICAL DRAWING**   **YEAR/ LEVEL: 13 A/B**

| Strand	Applied Mechanics
Sub - Strand	Truss
Content Learning Outcome	Analyze the force systems acting on different structures.

TRUSSES: Graphical Method

Continuation from Worksheet 17

- This lesson is a continuation of Trusses where we will be solving Truss exercises using the Graphical Method.
- Recap the Worksheets 16 & 17
  - Types of Trusses
  - Newton's 3rd Law
  - Truss Analysis Graphical Method
  - Finding the Reactions at RL and RR.

Study the example given below and the knowledge gained in Worksheet 17 lesson to attempt this week activity.

Example: Find the reactions at the supports and magnitude and nature of force in the framework members.
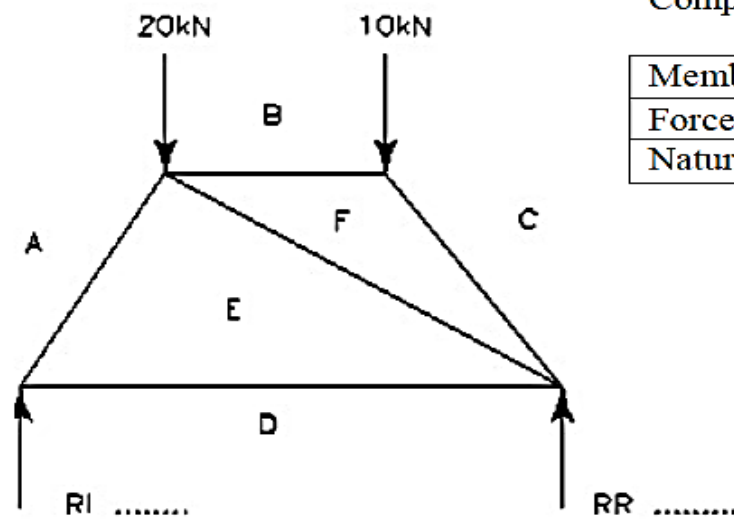

SPACE DIAGRAM

Complete the table given below:

Member	AE	BF	CF	DE	EF
Force (kN)					
Nature (C/T)					

STEPS OF CONSTRUCTION:

- Draw the Truss with the given dimension.
- Bows Notation
- Load line to scale
- Polar Polygon
- Funicular Polygon
- Transfer Closer
- Find RL and RR
- Draw the Force Polygon
- Find the magnitude of the Forces to scale
- Determine the nature of Force by drawing Stress Diagram(Compression & Tension)

SPACE DIAGRAM

STRESS DIAGRAM

LOAD LINE

FUNICULAR POLYGON

FORCE POLYGON

POLAR POLYGON
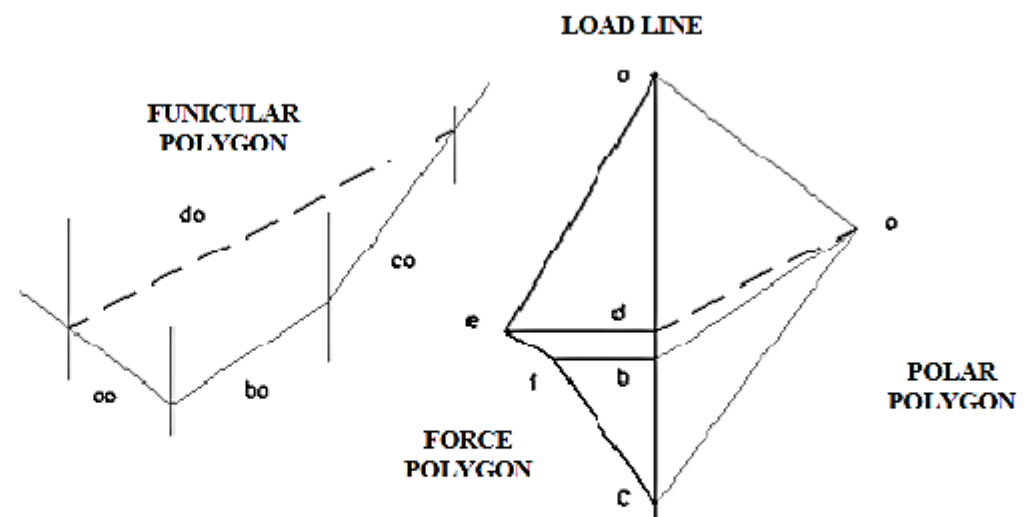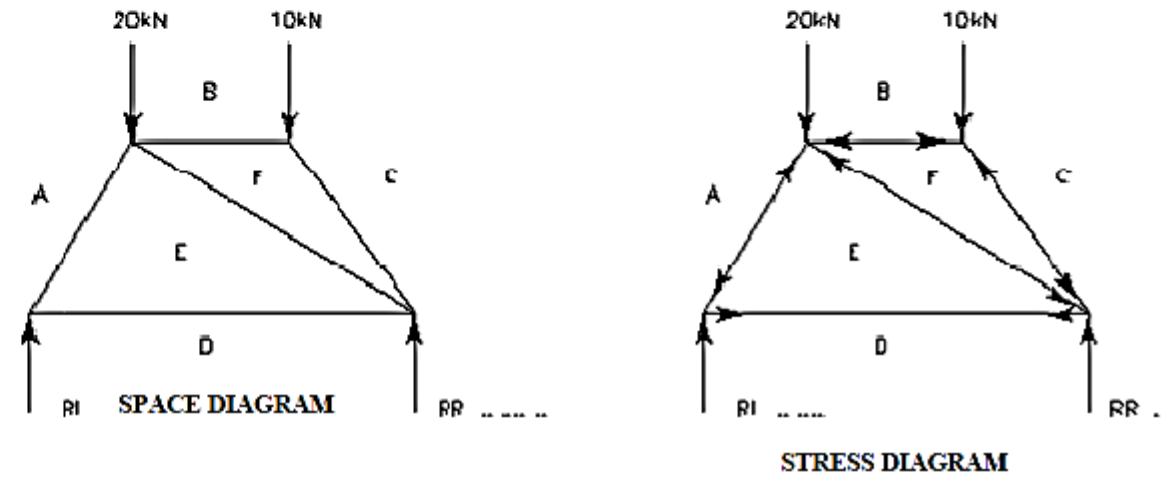
QUESTION 1: GRAPHICAL METHOD

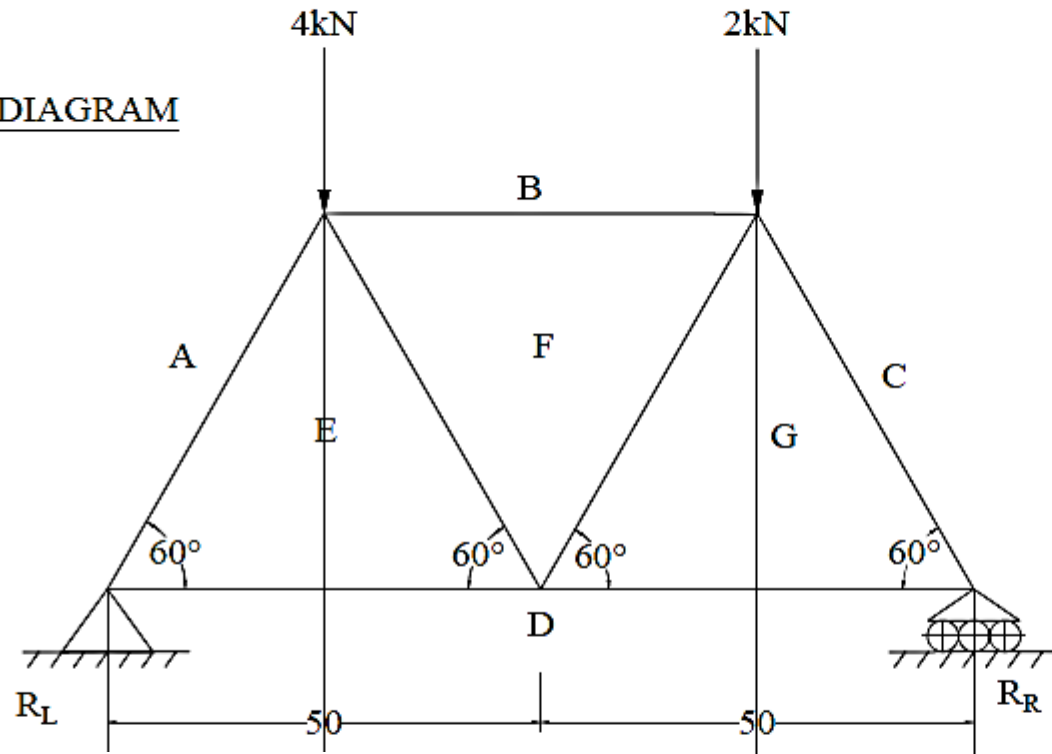**Given:** A Warren Truss with two loads acting on it.

Required:
1. Find the reactions at the supports RL and RR. **(5 m)**
2. Find the magnitude and the nature of forces acting on each member.
   Complete the table to analyze your answers **(5 m)**

1. REACTIONS   RL= _____   RR=_____

2.

MEMBER	AE	BF	CG	DE	EF	FG	DG
FORCE (kN)							
NATURE (C/T)							

SPACE DIAGRAM

4kN   2kN

LOAD LINE
SCALE 10mm= 1kN

a

POLE O

Sa