

**MATERIAL & STRUCTURE LABORATORY**

**FACULTY OF CIVIL ENGINEERING TECHNOLOGY**

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**Results**

Analyze the force in each member, including the force in the chord and compare these results with the theory of equilibrium of forces.

Angle 1  = \_\_\_\_\_\_\_ degrees

Angle 2 = \_\_\_\_\_\_\_ degrees

Initial reading of spring balance 1 = \_\_\_\_\_\_\_ N

Initial reading of spring balance 2 = \_\_\_\_\_\_\_ N

**Table 1: Data of two- dimensional force systems**

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| --- | --- |
| **VERTICAL HANGER** **LOAD (N)** | **SPRING BALANCE READING (N)** |
| **BALANCE 1** | **BALANCE 2** |
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1. Plot the graph of force in each member, including the force in the chord versus vertical load.
2. Determine the slope of each graph. This represents the average force in the member per unit vertical load.
3. From the slope calculate the components of the vertical and horizontal force for each member.



**Discussion/Analysis**

1. Theoretically when a body is in equilibrium the summation of forces at a point in a particular direction is zero. Does the above experiment verify this statement taking into consideration the error that occurs?
2. Give your comments on the polygon of forces obtained by this experiment.

**Conclusion**

Refer to the objective of the experiment.

**References/Appendices**

1. Text book, reference books from the library or electronic references from the internet.
2. Related photo or plate due to the experiment.