**Data Collection Sheet Example Answers**

**Collect Your Data**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Polygon(# sides)** | **Sum of Interior Angles** | **Measure of Angle 1** | **Measure Angle 2** | **Deflection of Angle 1\*** | **Deflection of Angle 2\*** |
| Triangle (3) | 180 | 60 | 65 | 60-(57)=3 | 65-(50)=15 |
| Pentagon (5) | 540 | 113 | 103 | 113-(100)=13 | 103-(100)=3 |
| Square (4) | 360 | 90 | 90 | 90-(75)=15 | 90-(70)=20 |

**\*Tip for finding the deflection angle:**You have the initial measurements of the target angles. Once you apply load to your truss, the target angles change. *Calculate the change* between the initial target angle and the deformed angle. The change is called the deflection angle.

|  |  |  |
| --- | --- | --- |
| **Load capacity:****# of books the truss supported** | **First iteration = 2** | **Second iteration = 3** |

**Graph Your Data**

* 1. Graph the deflection in each angle vs. the number of sides in each polygon.

**# of Sides**

**Angle Deflection**

3 4 5

0 5 10 15 20

**Angle 1**

**Angle 2**



* 1. Graph the number of books your truss supported vs. the number of sides in each polygon.

**Team 1 - pentagon**

**Team 2 - square**

**Team 3 - triangle**



0 5 10 15 20

3 4 5

**# of Sides**

**# of Books Supported**