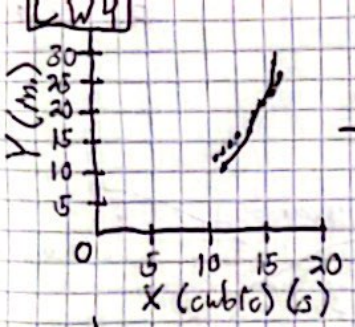
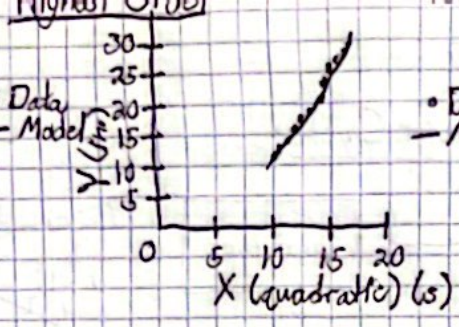
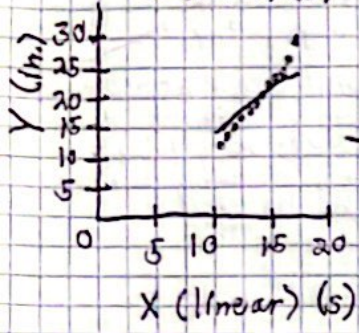






Conclusion: The different formulas for data modelling allow engineers to test different variables while searching for specific values. The model also varies wildly from the data, depending on the equation being applied. This data modeling proves useful for tests and accuracy.

10/16/21

Building the Pendulum: Project 2 - Part 1

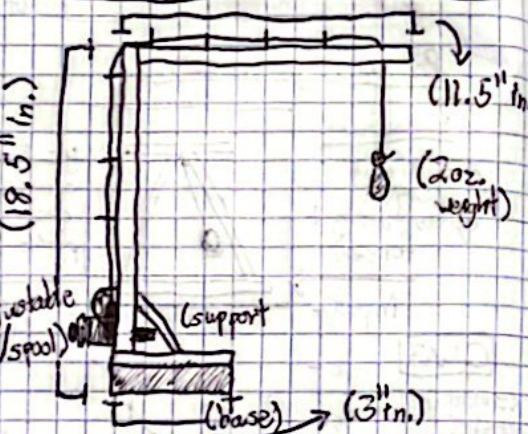
Materials:

- 2.5 x 23 x 31 in. rustic wood slats
- 20 yd. waxed cotton chord spool
- 2 oz. Bullet Weight bank sinker
- Standard 9" (in.) nails
- 20 mm zinc plated screw eyes

Tools:

- Hammer (U.S)
- Screwdriver (Phillips)
- Drill (Foreman)
- Standard woodsaw
- Standard 12" (in.) ruler

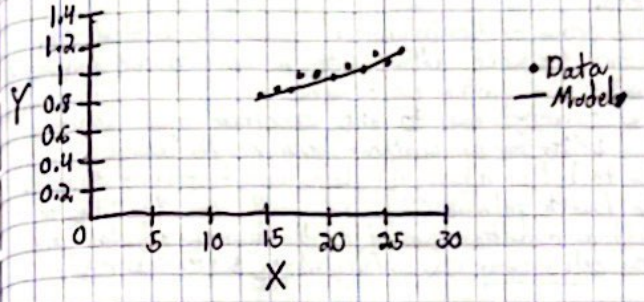
Final Product Sketch:



[Predictable Pendulum System (see above)]

Pendulum Data Analysis: Project 2 - Part 2

Cubic:



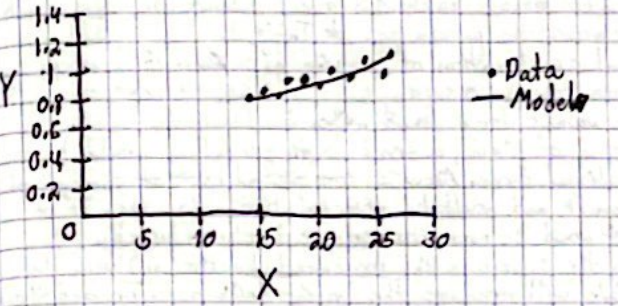
Coefficients:
a) 0.000335664
b) -0.018882284
c) 0.37669114
d) -1.651363621

S Parameter: 0.000403809

Input (X): measured lengths (cm)

Output (Y): measured periods (s)

Quadratic:



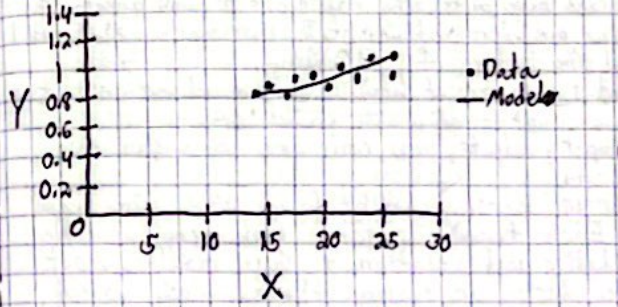
Coefficients:
a) 0
b) 0.000250583
c) 0.019141492
d) 0.537436361

S parameter: 0.000467144

Input (X): measured lengths (cm)

Output (Y): measured periods (s)

Linear:



Coefficients:
a) 0
b) 0
c) 0.028663636
d) 0.449481818

S parameter: [redacted] 0.000472042

Input (X): measured lengths (cm)

Output (Y): measured periods (s)

Conclusion: Between each of the graphs, much of the data presented, looks very similar due to the normalization of the given values as well as the limitations faced when working