BRIDGE TRUSS SIMULATOR

Instructions:

Go to http://www.jhu.edu/virtlab/bridge-designer

Read the description of how to use the simulator.

Go to http://www.jhu.edu/virtlab/bridge/bridge.htm

Design a basic triangle as shown. Apply a 50.0 N load at the top node of the triangle. Record the values. Write a (T) after the value if it is in Tension and write a (C) after the value if it is Compression.

Clear the values and add the additional member as shown. Repeat the procedure.
Clear the values and create your own design. Repeat the procedure using a load of 50.0N.

What observations did you make about the truss design?

What are the differences between fixed and rolling nodes? Why are they significant?

How does the simulation show forces in Tension and Compression?

What conditions (yes, more than one) must be met?

How would engineers use this information? What loads would they need to consider acting on a roof truss?