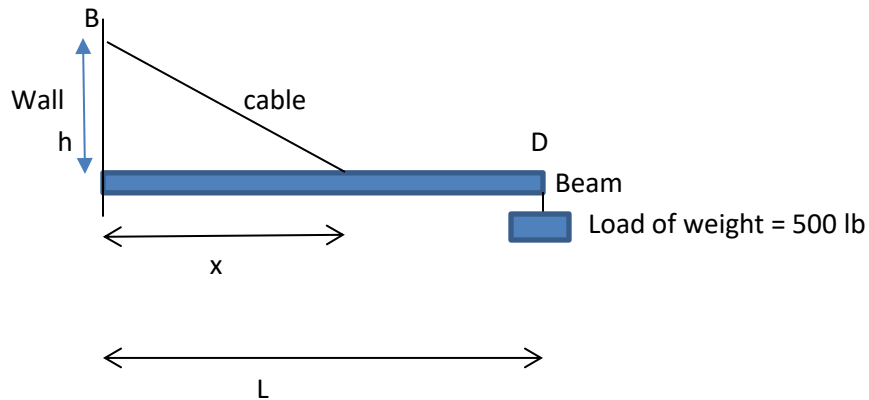


HW 8: Problem taken from MATLAB by Gilat Ed. 5 Chapt 4, problem 5.



A beam with a length L is attached by a cable to a wall. See the diagram as shown. A load of $W = 500$ lb is attached at point D to the beam. The shear stress τ in the double shear pin at B is given by the formula:

$$\tau = (WL) \left(\frac{\sqrt{h^2 + x^2}}{hx} \right) \left(\frac{1}{2A} \right)$$

The unit for τ is pounds/in². $L = 120$ inches. $h = 50$ inches. The variable x is the distance from the wall where the cable is connected. A is the area of a circle since the pin is circular that connects the cable to the mounting bracket at B. The cross sectional area of the pin is $A = \pi d^2/4$. The diameter of the pin $d = 0.50$ in.

Create a script file for the following:

Using a loop calculate τ when $x = 10:1:110$ inches. Plot τ vs. x using the plot command. Make sure the graph is properly labeled on the axes with units and has a title. Be sure to suppress output inside the loop!

Your problem submission should show your name, 'HW 8', the script file and output.