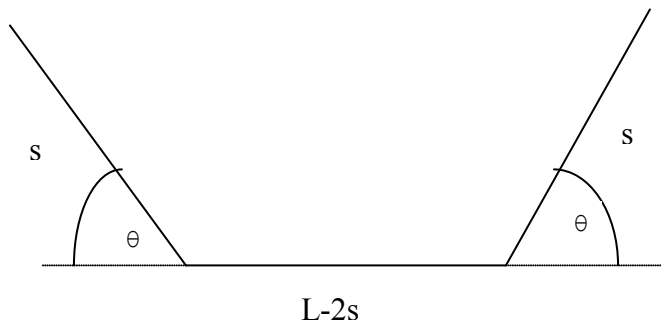


Programming Concepts for Mechanical Engineers

Your mind is always in the gutter

Title: Maximizing the water flow out of a gutter?

Background: A sheet metal of width L is bent at two locations to make a gutter. The gutter cross-section is as shown.



Specifications:

A. Write a program that inputs the data, and finds the cross-sectional area of the gutter.

The inputs are

total width of three cross-sectional sides of gutter, L

the angle of the bend, θ

the length of the either side of the gutter,

and the outputs the data are

the cross-sectional area of the gutter, A .

B. Write a program that maximizes the cross-sectional area of the gutter. The input data is

total width of three cross-sectional sides of gutter, L

and outputs the data

the angle of the bend, θ

the length of the side of the gutter, s

the cross-sectional area of the gutter, A .