

# Heron problem

Solve the following optimization problem

A and B are two given points on the same side of a line  $\ell$ . Find a point D on  $\ell$  such that the sum of the distances from A to D and from D to B is minimum

$$\min d_1 + d_2$$

$$d_1^2 = x^2 + h_1^2$$

$$d_2^2 = (L - x)^2 + h_2^2$$

