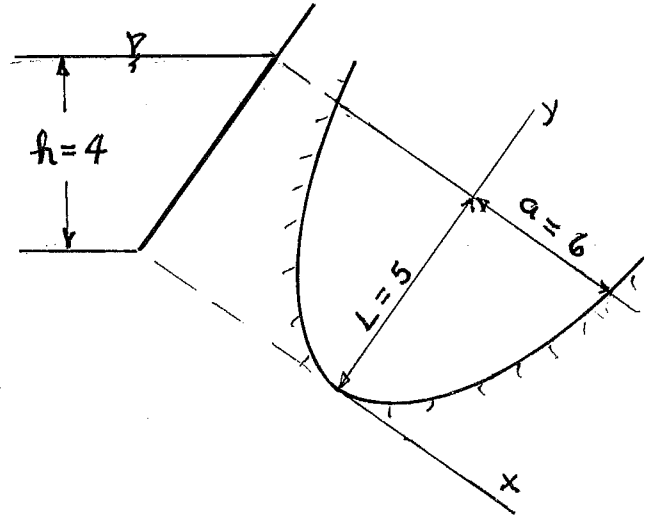


### Homework 3/8

2.5 A dam consisting of a slanted wall has a parabolic plan form as shown. Find the resultant force and its location of the water on the dam.



Equation of the plan form

$$y = L(x/a)^2$$

Wetted area:  $A = 4aL/3$

Centroid:  $y_c = 3L/5$

Second Moment:  $I_{xx} = 4aL^3/7$

2.6 Find the horizontal and vertical components of the resultant force on the wall composed of a quarter circle  $0 \leq z \leq 2$  and the vertical segment  $2 \leq z \leq 4$ . Find the moment of the horizontal component about 0.

