Ex1: A swimming pool is 20 m long and 10 m wide. The bottom is flat (but not horizontal) and the sides are vertical. The water is 3m deep at one end and 1 m deep at the other end. Find the force of the water on one of the sides.

Ex2: Determine the hydrostatic force on a vertical gate of radius 2m, which is under the water.

a) 50 m from its center.

b) 50 m from its top.

c) 50 m from its bottom.

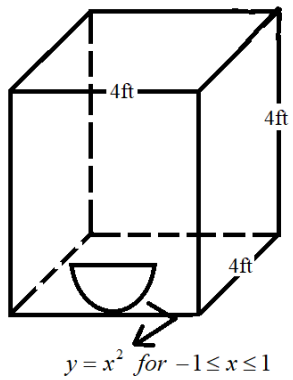
Ex3: A dam has the shape of a trapezoid. The height is 20 m, and the width is 50 m at the top and 30 m at the bottom. Find the force on the dam due to hydrostatic pressure if the water level is 4 m from the top of the dam.

Ex4: Find the hydrostatic force on one end of a cylindrical drum with radius 3 ft if the drum is submerged in water 10 ft from its top.

Ex5: A flat isosceles right triangular plate with base 6 ft and height 3 ft is submerged vertically, base up, 2 ft below the surface of a swimming pool. Find the force exerted by the water against one side of the plate.

Ex6: The cubical metal tank shown here has a parabolic gate, held in place by bolts and designed to withstand a fluid force of 160 lb without rupturing. The liquid you plan to store has a weight density of 50 lb/ft^3.

a) What is the fluid force on the gate when the liquid is 2 ft deep?



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b) What is the maximum height to which the container can be filled without exceeding its design limitation?