Announcements

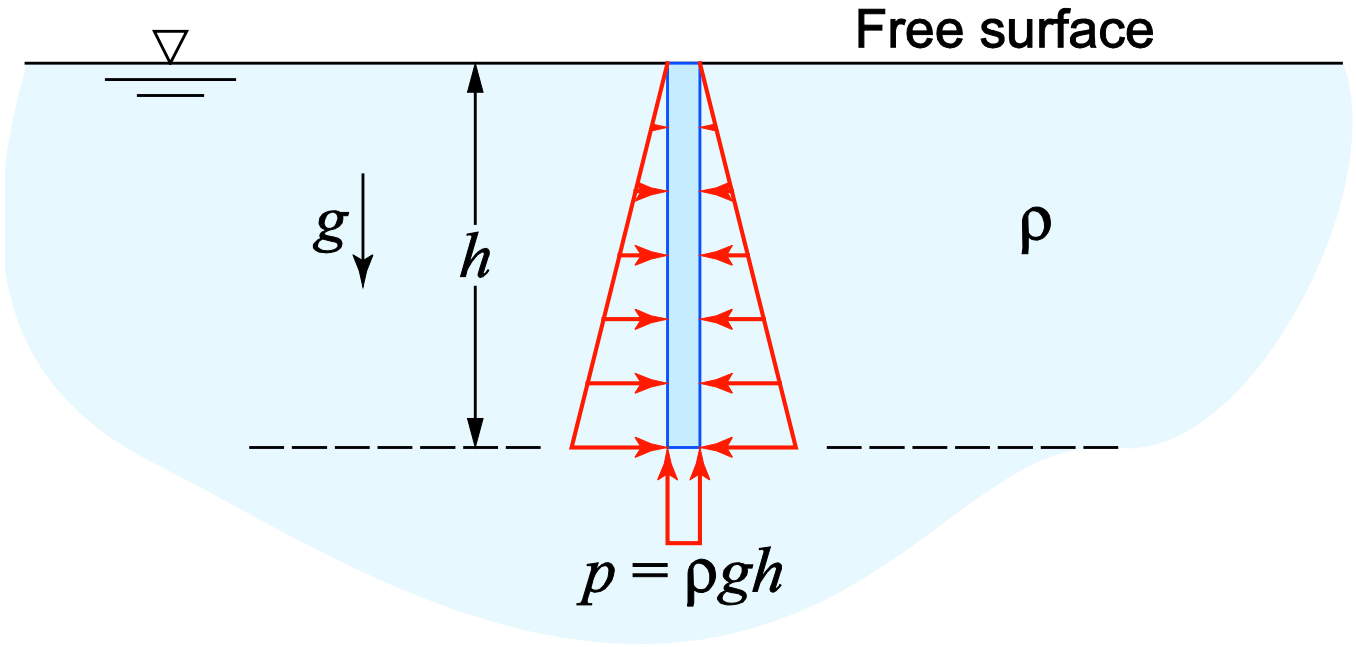
- 8 days until Thanksgiving, got your Thanksgiving pants ready?

❑ Upcoming deadlines:

- Tuesday (11/27)
  - PL HW

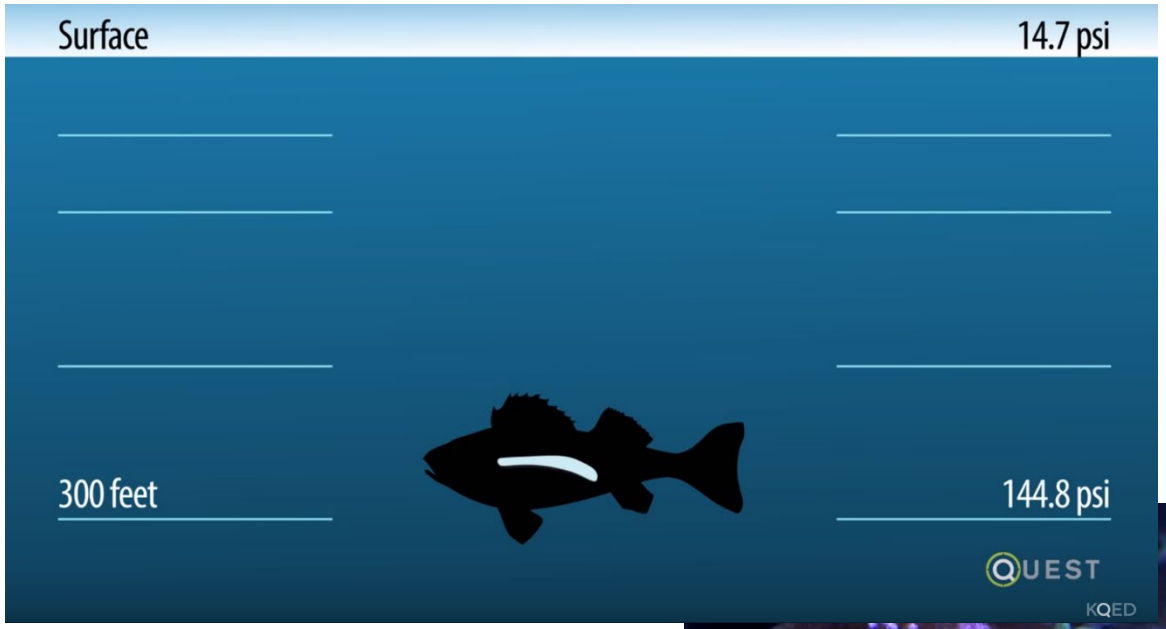
Recap: Fluid Pressure

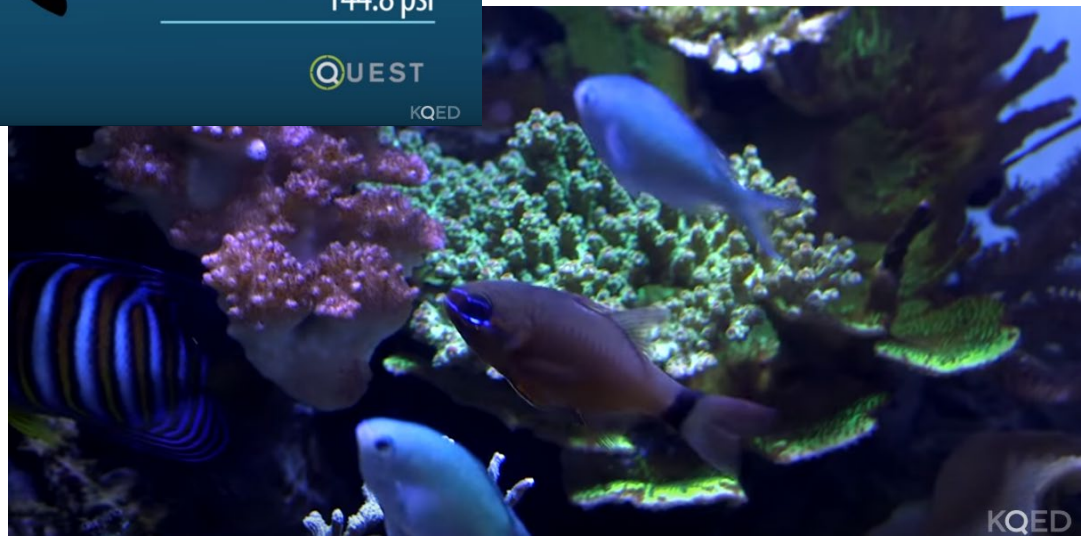
- Pressure varies *linearly* from the free surface.
- Pressure is *constant* along any horizontal plane.
- Pressure acts perpendicular to the submerged object's surface.



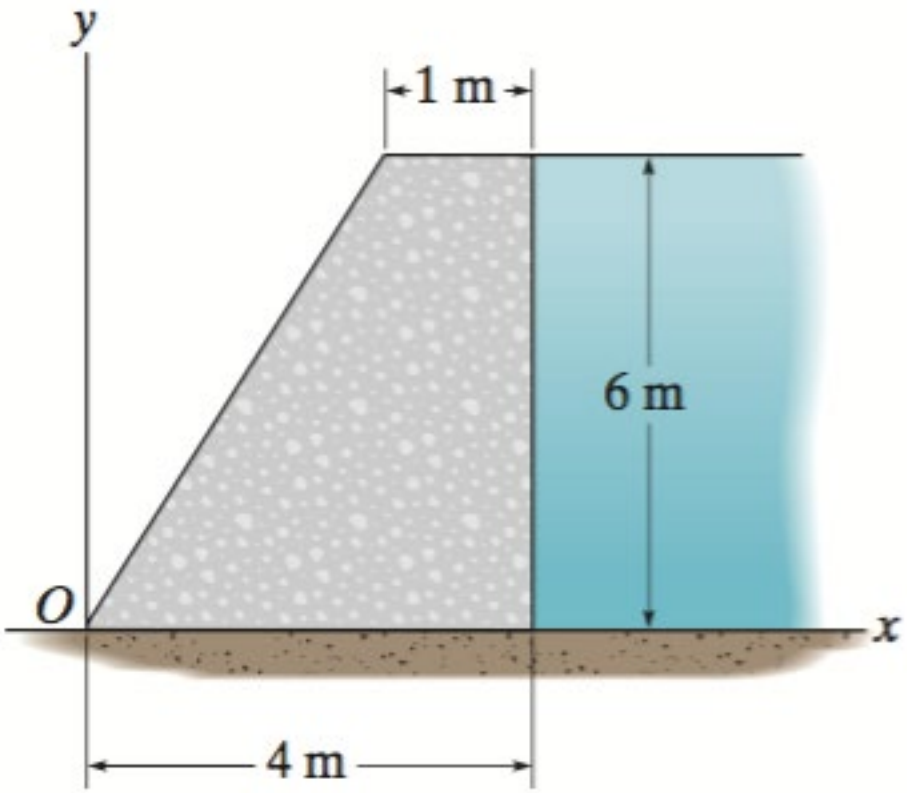
Deep Sea Fish

How to transport deep sea creatures to aquariums?

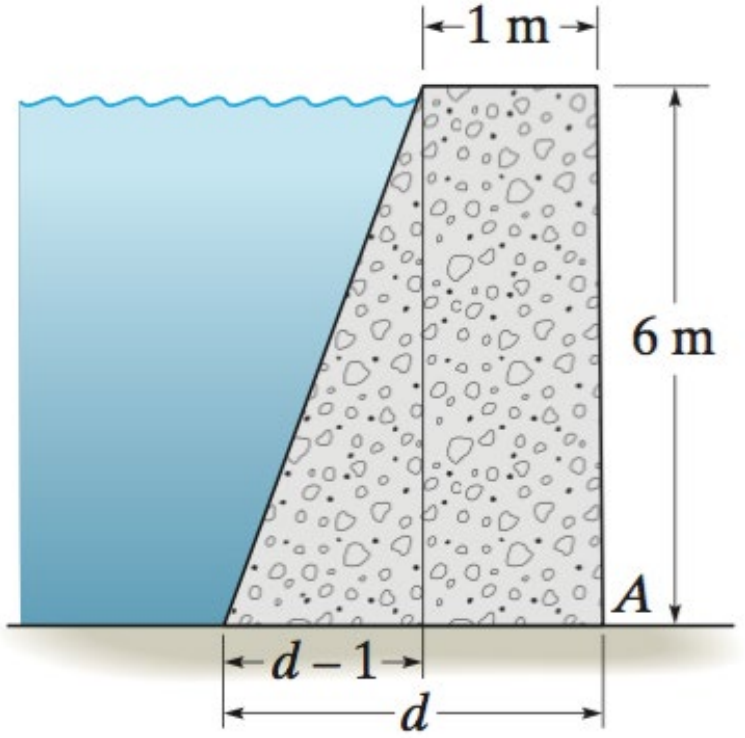




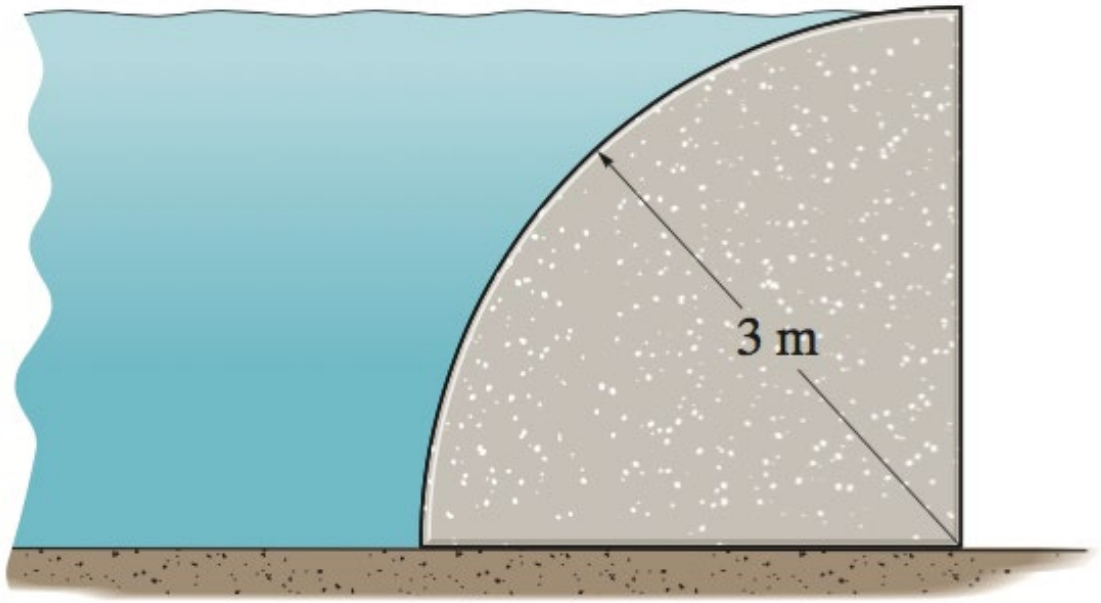
The factor of safety for tipping of the concrete dam is defined as the ratio of the stabilizing moment due to the dam's weight divided by the overturning moment about *O* due to the water pressure. Determine this factor if the concrete has a density of $\rho_{conc} = 2.5\ Mg/m^3$ and for water $\rho_{water} = 1\ Mg/m^3$.



Determine the magnitude of the resultant force acting on the 100-m wide dam due to hydrostatic pressure. Let $d = 2.5$ m.
($\rho_{water} = 1$ Mg/m^3)

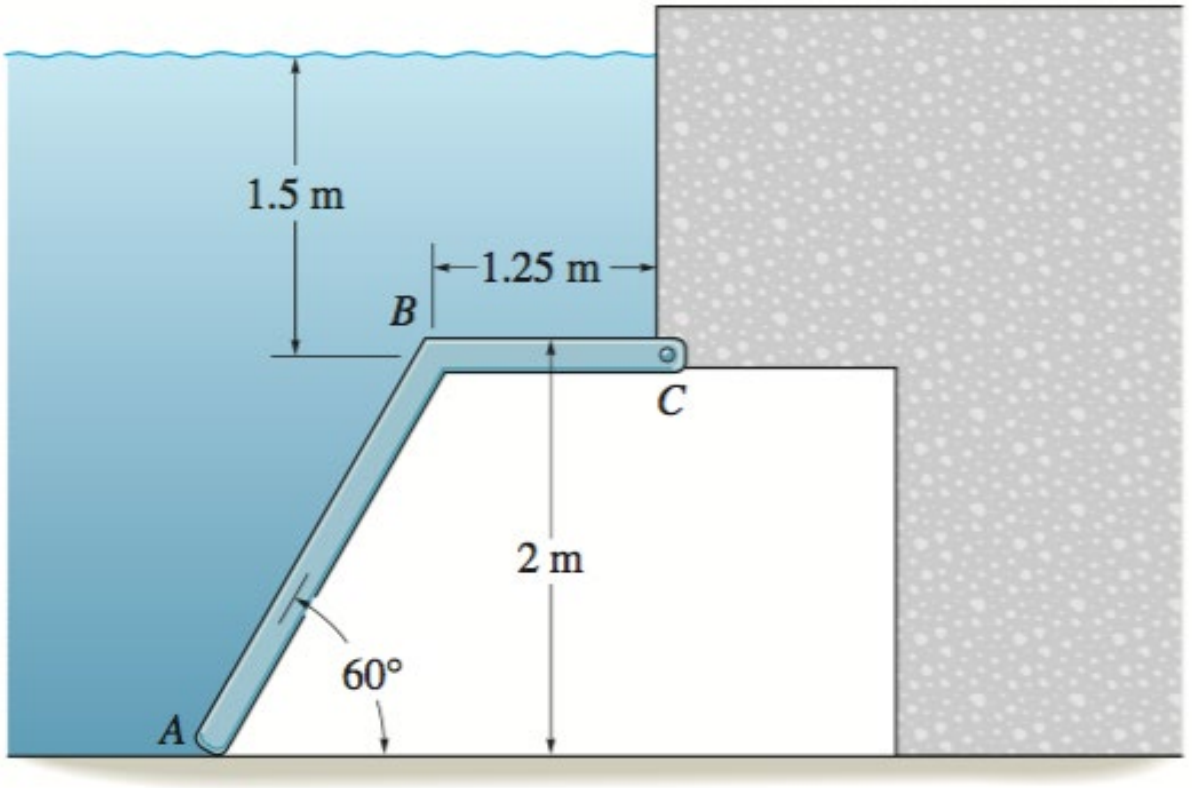


Determine the magnitude of the resultant force acting on
on the 10-m wide dam due to hydrostatic pressure.
($\rho_{water} = 1\ Mg/m^3$)



Determine the magnitude of the resultant force acting on gate *ABC* due to hydrostatic pressure. The gate has a width of 1.5 m.

($\rho_{water} = 1\ Mg/m^3$)



What is the *vertical* component of the resultant force acting on gate *ABC* due to hydrostatic pressure. The gate has a width of 1.5 m.
($\rho_{water} = 1$ Mg/m^3)

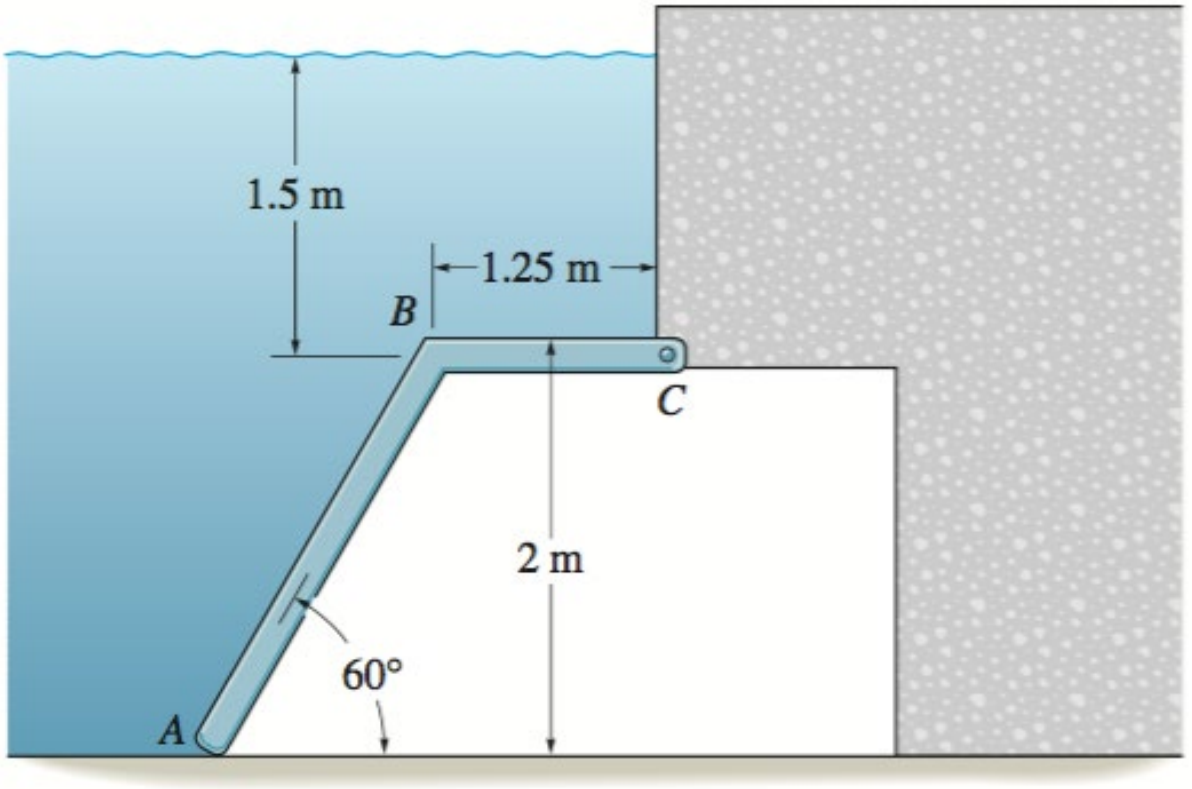
A) 4.55 kN

A) 27.6 kN

B) 44.6 kN

C) 70.1 kN

D) None of the above



When a rectangular block of wood of cross sectional area A, height h, and mass m is placed in a lake. How far below the surface z is the bottom of the block? ($\rho_{water} = 1\ Mg/m^3$)