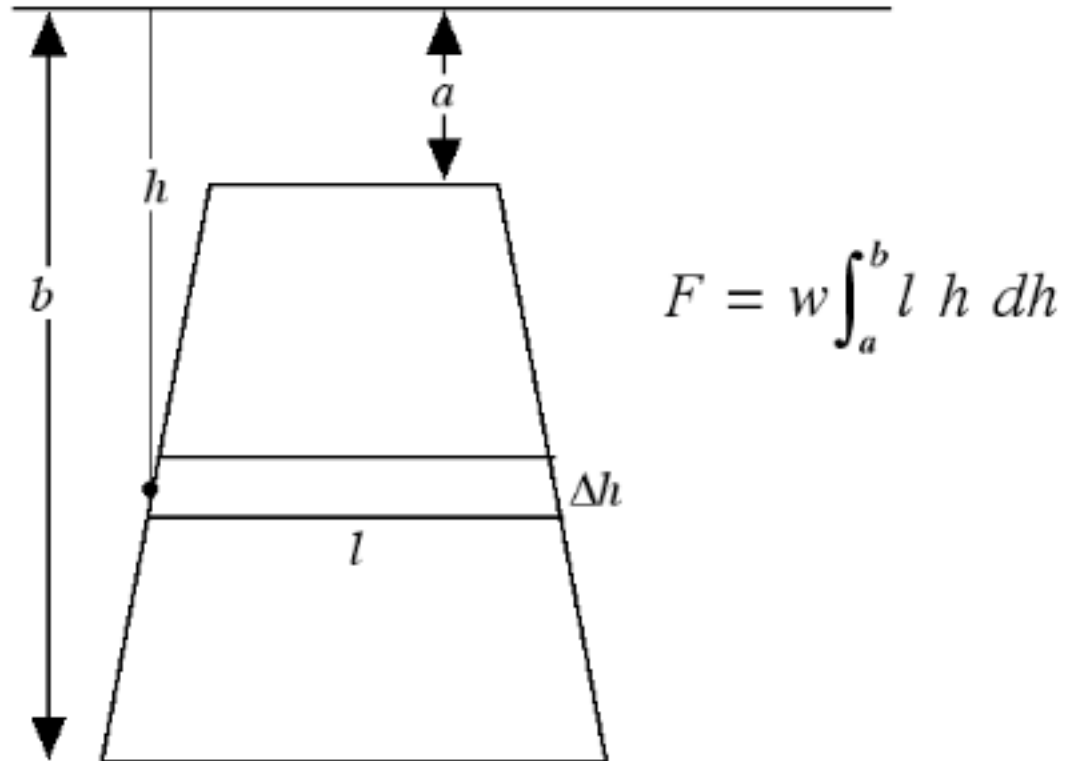


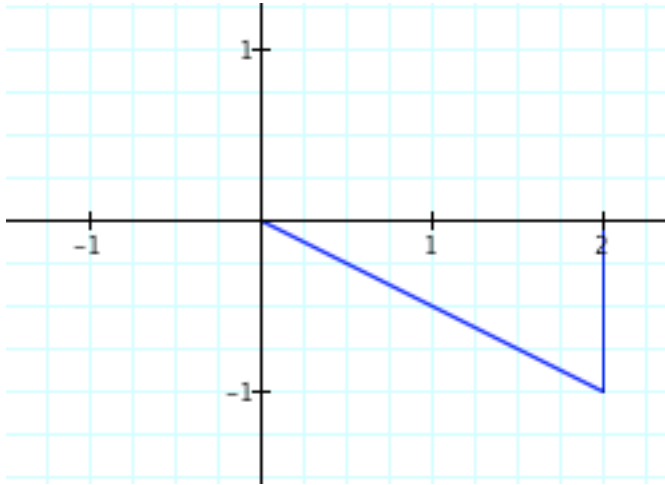
Fluid Pressure



1. A vertical floodgate of a dam is 5 ft wide and 4 ft high. Find the force on the floodgate if its upper edge is 3 ft below the surface of the water.

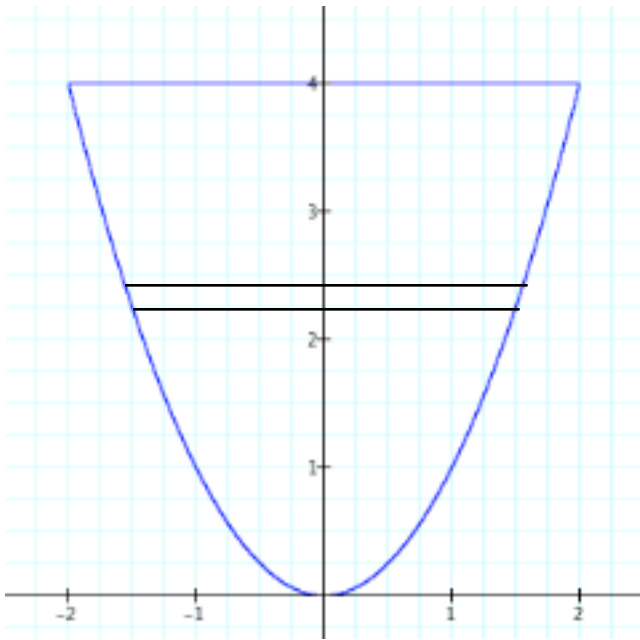
$$F = w \int_3^7 5h \, dh$$

2. The vertical end of a tank of water is in the shape of a right triangle as shown below. What is the force on the end of the tank?



$$F = w \int_0^2 (4 - x) y \, dy = w \int_0^2 (4 - 2y) y \, dy$$

3. The ends of a trough full of water are parabolic segments. If the end of the trough is 4 ft wide at the top and 4 ft deep find the force on one end.



$$F = w \int_0^4 (4 - y) 2\sqrt{y} \, dy$$