Your ship has struck an underwater object and is taking on water. The captain asks you, the ship’s engineer, to estimate how much longer before the ship sinks. You know that the ship has an approximately rectangular cross-section, with a width of W ft, a height of H ft, and a length of L ft. Also, you know that the ship weighs approximately W lbs. How long before the ship sinks, assuming that the leak started T_1 minutes ago and there is D_1 feet of water inside the ship? The unit weight of salt water is 64.2lb/ft^3.
Variable Values:
W = 25 ft
H = 20 ft
L = 40 ft
W = 642,000 lb
T₁ = 30 minutes
D₁ = 2 ft

Ans: ship will sink 2 hrs from now