

## 13.42 Homework #7

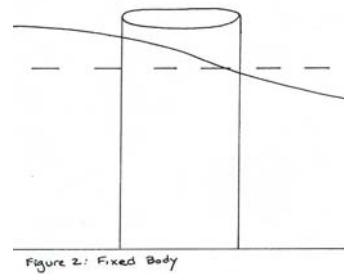
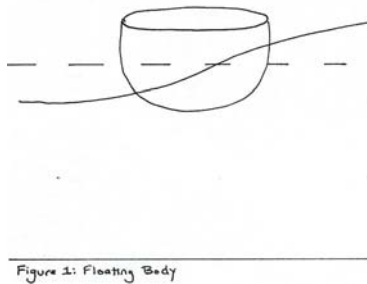
Spring 2005

Out: Thursday, March 31, 2005

Due: Thursday, April 7, 2005

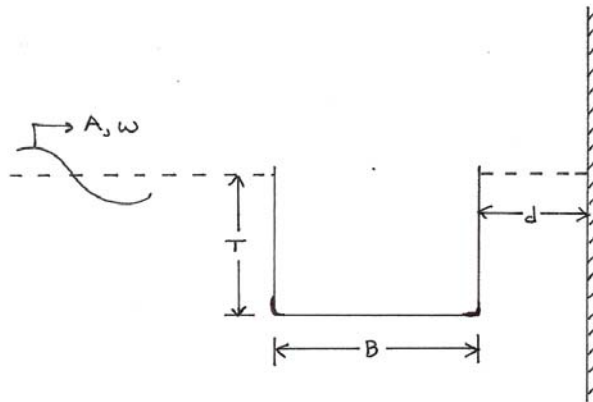
---

Problem 1: Consider the following scenarios:



- Identify all of the appropriate boundary conditions in each scenario.
- Identify and explain the relevant types of wave potential in each scenario.

Problem 2: Given a two-dimensional barge alongside a pier as shown:



- Derive expressions for the heave and sway Froude-Krylov exciting force, taking into account the presence of the pier.
- Find the wavelengths of the ambient waves for which the heave and sway Froude-Krylov exciting forces disappear.