

Problem 130G

A small boat floating on the surface of an infinitely deep ocean rises and falls by $\pm 1m$ as a result of travelling waves whose wavelength is $10m$.

1. What is the maximum vertical acceleration of the boat in numbers of g ? (where g is the acceleration due to gravity)
2. How deep does a submarine object have to be for the rise and fall to be one tenth of that of the boat on the surface?