

Homework Assignment 2

assigned: 05 Feb 2013

due: 14 Feb 2013

A yellow submarine is conducting a passive search against blue submarines.

Yellow submarines have a sonar with directivity index of 15 dB and detection threshold 8 dB. Blue submarines have known source level 140 dB. Environmental conditions yield an isotropic noise level of 65 dB. You can assume an absorption decay coefficient 0.02 dB/km.

At what range can the blue submarine be detected by the yellow submarine? Show your answer graphically if you like – since it is the way I would do it.