

# **G-MG The Lighthouse Problem**

## **Task**

Suppose that even in perfect visibility conditions, the lamp at the top of a lighthouse is visible from a boat on the sea at a distance of up to 32 km (if it is farther than that, then it is obscured by the horizon).

- a. If the "distance" in question is the straight-line distance from the lamp itself to the boat, what is the height above sea level of the lamp on top of the lighthouse?
- b. What are two other interpretations of the distance being investigated in this problem? Describe how to solve the alternate versions.



G-MG The Lighthouse Problem  
Typeset May 4, 2016 at 22:09:21. Licensed by Illustrative Mathematics under a  
Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License .