SEARCH RESCUE
Exploring the maths behind HM Coastguard

LONDON GRID FOR LEARNING | HM Coastguard

Bearings Worksheet (ANSWERS) for KS2-4

These resources are based on real-life challenges faced daily by HM Coastguard. Each problem has been assigned a coastguard rank according to its challenge level to enable easy differentiation.

Maritime Operations Officer

Senior Maritime Operations Officer

Commander

Chief Coastguard

The four levels vary in terms of scaffolding and challenge, but are all based on the same scenario.

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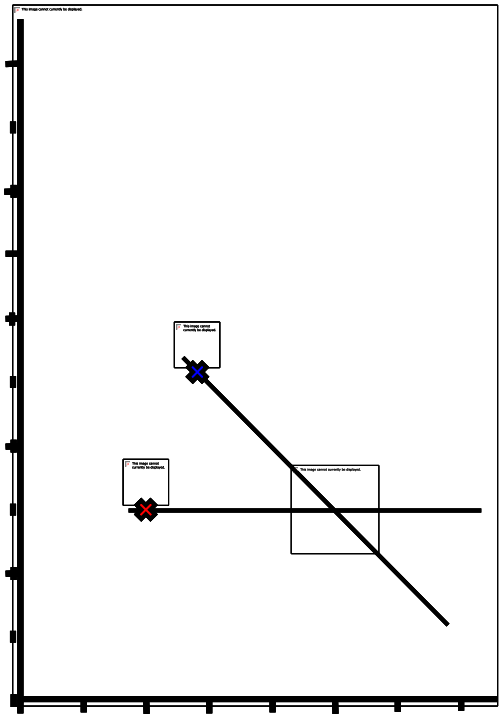


1) A sinking ship has been sighted by two people with the following bearings:

135° from Person A

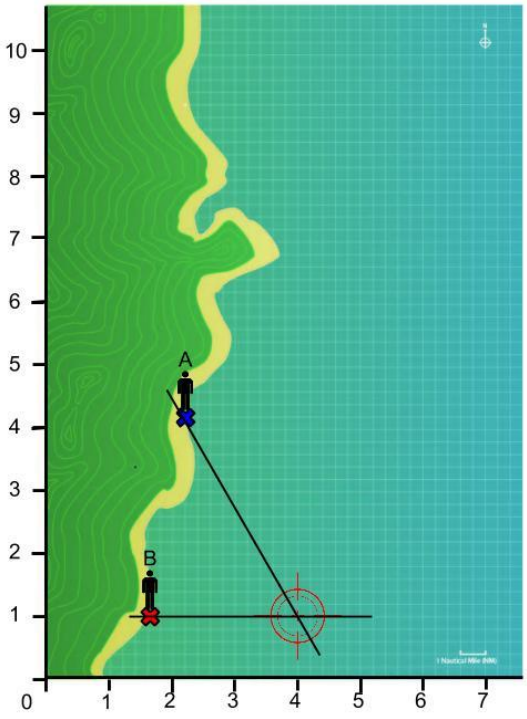
090° from Person B

a) Identify a suitable coordinate for the coastguard to begin their search.
(5,3)

b) The coastguard will need to search an area of 1 nautical mile around the ship. Mark this on your map.
(see map)

c) Identify the shortest distance of the ship to the shore.
(6.5 - 7 nautical miles)

d) At 40 NM (nautical miles) per hour, how long would it take to get the crew back to shore?
(~10 minutes)



2) A sinking ship has been sighted by two people with the following bearings:

120° from Person A

090° from Person B

a) Identify a suitable coordinate for the coastguard to begin their search.
(4,1)

b) The coastguard will need to search an area of 1 nautical mile around the ship. Mark this on your map. **(see map)**

c) Identify the shortest distance of the ship to the shore.
(6 miles)

d) At 40 NM (nautical miles) per hour, how long would it take to get the crew back to shore?
(~9 minutes)

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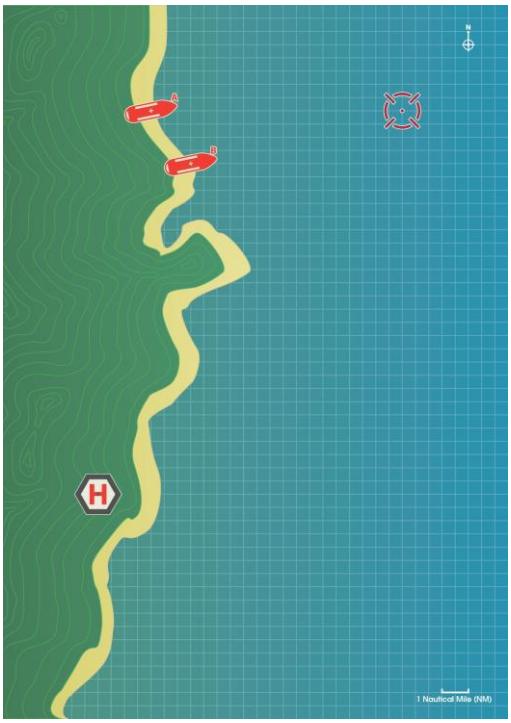

3) A distress call has come from the location shown on the map.

a) Find the bearing that each of Boat A, Boat B and the helicopter need to travel.
(Boat A = 090, Boat B = 076, Heli = 039)

b) The coastguard will need to search an area of 1.5 nautical miles around the ship. Mark this search area on your map. **(Circle with 3 square radius)**

c) Tell the helicopter pilot how long they should travel from helipad to the target. **(~18.5 miles)**

d) Lifeboats can travel at 40NM per hour. The helicopter can travel at 80NM per hour. Who will arrive first?

Boat B = 8 NM from target = 12 minutes

Heli = 18.5 NM from target = 13.88 minutes

4) A distress call has come from the location shown on the map.

a) Find the bearing that each of Boat A, Boat B and the helicopter need to travel.
(Boat A = 310, Boat B = 223, Heli = 021)

b) The coastguard will need to search an area of 1.5 nautical miles around the ship. Mark this search area on your map. **(Circle with 3 square radius)**

c) Tell the helicopter pilot how long they should travel from helipad to the target. **(~16.5 miles)**

d) Lifeboats can travel at 40NM per hour. The helicopter can travel at 80NM per hour. Who will arrive first?

Boat A = 11 NM from target = 16.5 minutes

Boat B = 9 NM from target = 13.5 minutes

Heli = 16.5 NM from target = 12.38 minutes

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