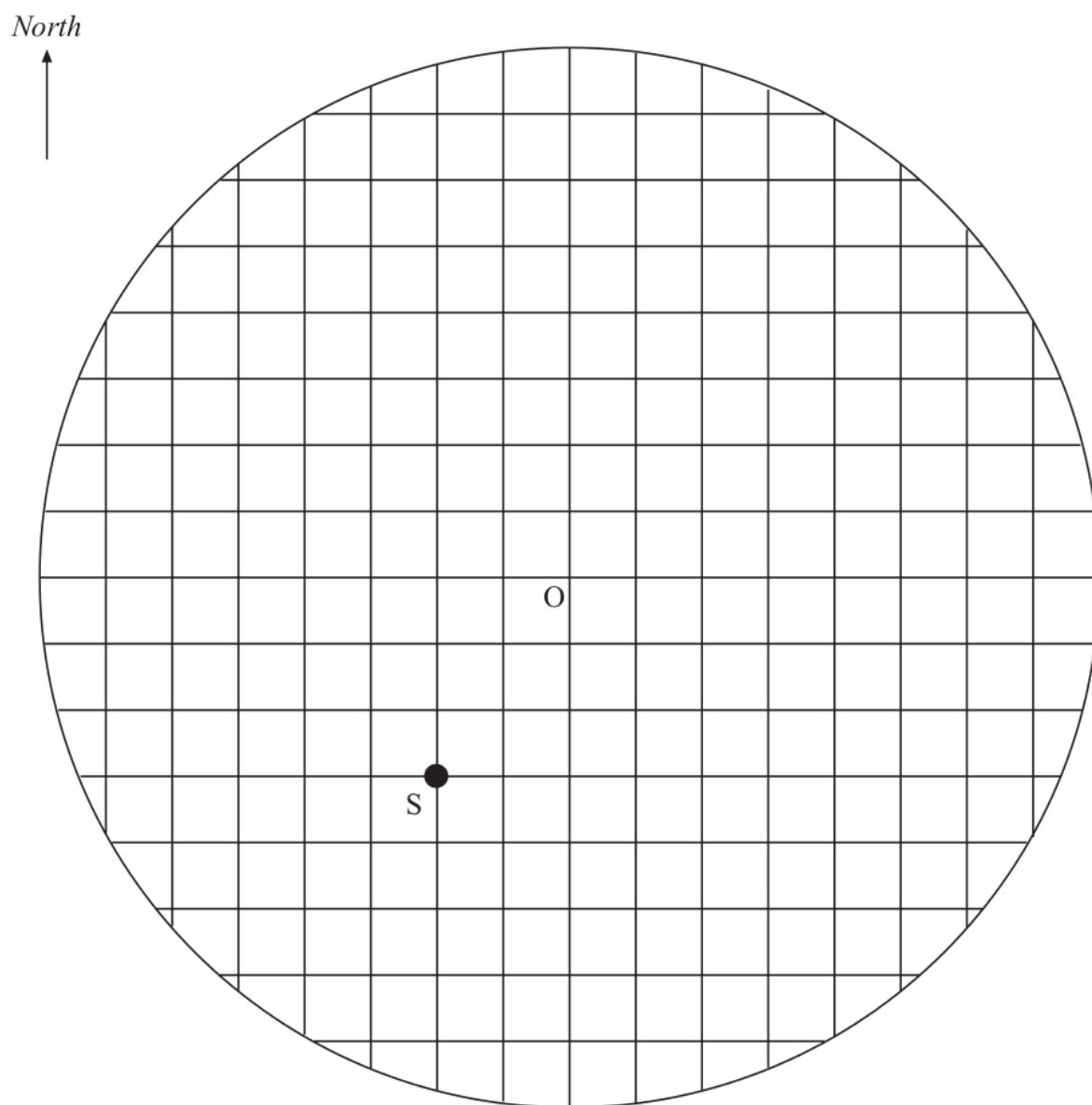


ACTIVITY 15.5.1

Radar

A ship is anchored at sea. The following diagram represents the circular screen of the ship's radar display. The screen is divided into squares with each side of a square representing 10 km. The centre of the screen, O, represents the ship's own position. Another ship, S, is anchored at $(-2, -3)$. Its position is indicated by a blip on the screen. (In the diagram, we use a dot to represent the blip.)



ACTIVITY 15.5.2

Radar

1. What is the distance between the two ships, correct to the nearest km?

 2. At 0600 hours, another blip appears at (5, 6) with respect to O, travelling on a bearing of 200° at an estimated speed of 40 km/h.
 - (a) Use a dot to indicate the position of this unidentified vessel on the screen.
At 0600 hours, what is its distance from the ship at O, correct to the nearest km?
 - (b) Draw a line clearly on the screen to show the course of navigation taken by this unidentified vessel.
 - (c) If this unidentified vessel continues with the same course and the ship at O remains stationary, what will be the shortest distance between it and the ship at O? Estimate your answer from the screen and then calculate the answer, giving it to the nearest km.
 - (d) At what time will the unidentified vessel move out of the radar display? How far will it then be from O? Estimate your answers and then calculate them.
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Extension

If the ship at S remains at anchor, what is the shortest distance of the moving ship from S, and at what time will it be in this position?