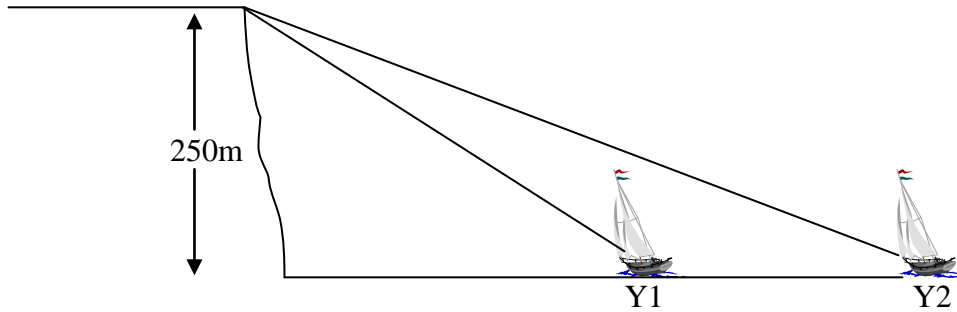
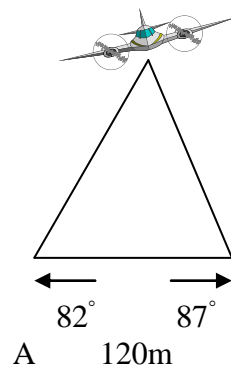


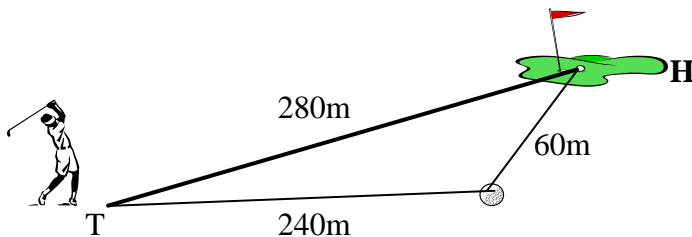
1. From a point 250m above sea-level, a coastguard measures the angles of depression of two yachts due east of him as 16° and 28° .
 - (a) Calculate the distance of each yacht from the base of the cliff.
 - (b) Calculate the distance between the yachts.



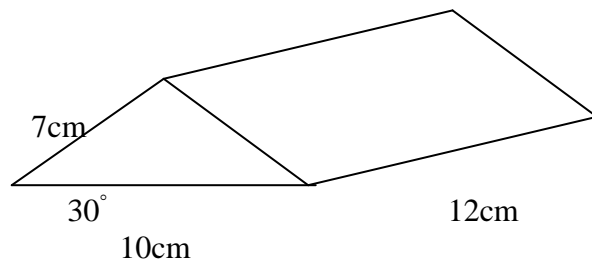
2. Two spotlights 120m apart on either side of a runway pick up an aircraft coming in to land. Find the distance from the aircraft to spotlight A.



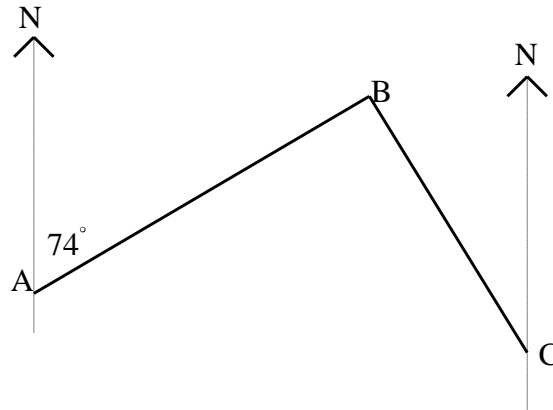
3. A golf ball at T is 280m from the hole H.
The ball is struck and comes to rest 240m from the tee.
After walking to the ball the golfer finds that the ball is still 60m from the hole.
Calculate the angle between the line TH and the direction of the golfer's shot from T.



4. Calculate the volume of this prism.



5. (a) There are three fishing ports A, B and C on a loch.



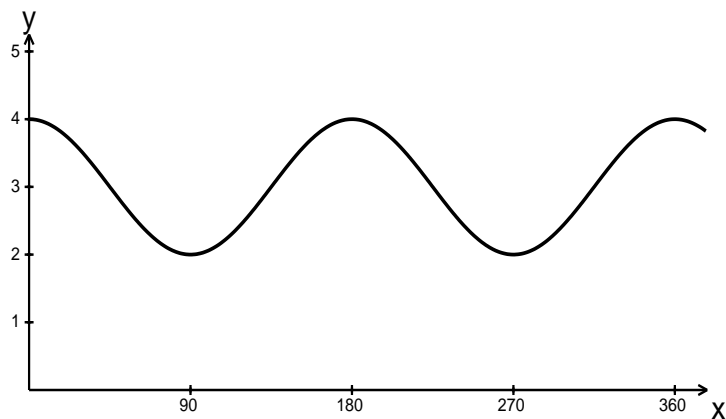
From A, the bearing of B is 074° .

From C, the bearing of B is 310° .

Calculate the size of angle ABC.

- (b) B is 230 metres from A and 110 metres from C.
Calculate the direct distance from A to C.

6. Part of the graph of $y = a \cos bx^\circ + c$ is shown below.
Write down the values of a , b and c .



7. In the diagram below ABCD is a square and ABE is an equilateral triangle. Also, $EC = EF$. Calculate the size of angle BEF, explaining your working clearly.

