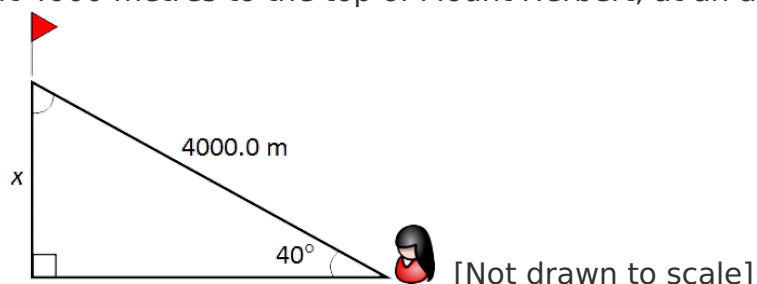# Calculating lengths and heights

This task is about using trigonometry to find missing lengths.

Use trigonometry to solve the following problems.
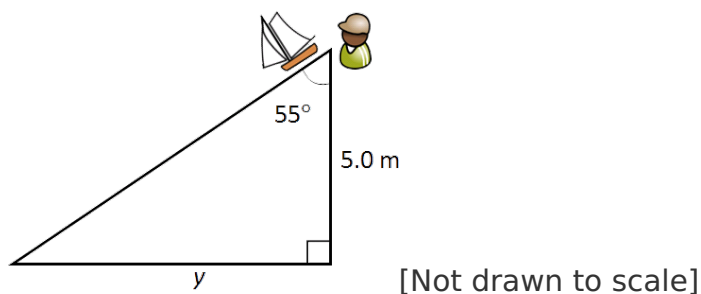
a) Teresa took the ski lift 4000 metres to the top of Mount Herbert, at an angle of 40º.

4000.0 m

x

40° [Not drawn to scale]

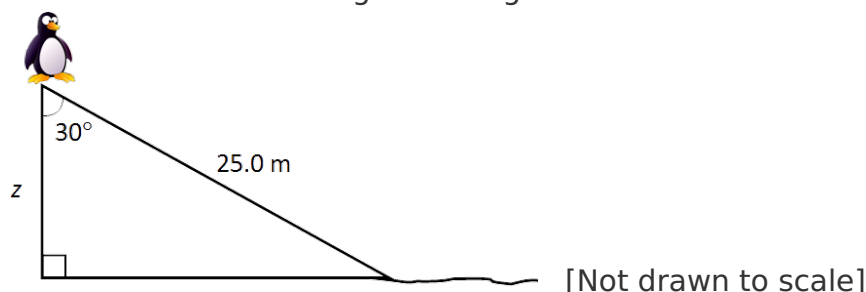Calculate x, the height of Mount Herbert. Show all your working in your calculation.

$x =$ _____ metres

b) Daniel's toy boat travelled 5 metres downstream at an angle of 55° before it reached the other side of the river.

55°

5.0 m

y [Not drawn to scale]

Calculate y the width of the river. Show all your working in your calculation.

$y =$ _____ metres

c) A penguin slid 25 metres down an iceberg at an angle of 30º until it reached the water.

30°

25.0 m

z

[Not drawn to scale]

Calculate z the height of the iceberg above the water. Show all your working in your calculation.

$z =$ _____ metres