Bearings elevation and depression

Learn and practise | Free preview

A sample from this topic. The complete topic collection contains three different resources and worked solutions.

Read the explanation and worked example. Show your working; use a calculator only where asked.

What you will practise

• Model direction and vertical angles using right-triangle trigonometry.

• Explain a method and check the reasonableness of a result.

Useful starting skills: Use the prerequisite operations and representations shown in the worked example.

Three-figure bearings are measured clockwise from north. Sketch north arrows and distinguish a bearing from the acute angle inside a right triangle.

Angles of elevation or depression are measured from a horizontal line. Include observer height when the required total height extends below eye level.

Worked example

From a point 20 m from a tower, angle of elevation is 45° and eye height 1.6 m. Find tower height.

Rise above eye=20tan45°=20 m.

Add eye height 1.6 m.

Answer: 21.6 m

Try it yourself

Name: _____ Date: _____

1. What direction is bearing 090°?

2. A point is 6 km east and 8 km north. Find direct distance.

Answers and explanations

Check the method as well as the final answer. An alternative correct method is also valid.

1. East

It is a quarter-turn clockwise from north.

2. 10 km

Pythagoras.

Curriculum reference: VC2M10M03

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