# Geometric construction algorithms

## 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

• Design and test geometric algorithms using explicit conditions.

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

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

A construction algorithm should specify tools, steps and conditions. Trace it using easy examples and boundary cases; refine instructions that allow unintended results.

Geometric properties supply checks. For example, three positive lengths form a triangle exactly when the sum of the two smaller lengths exceeds the largest.

## Worked example

Test whether 4,6,10 form a triangle.

Order the lengths.

4+6=10, not greater than 10.

Answer: No; the result is a straight degenerate arrangement

## Try it yourself

Name: _____ Date: _____

1. Use triangle inequality for 5,7,9.

2. Test 2,3,6.

## Answers and explanations

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

### 1. A triangle is possible

$5+7>9$.

### 2. Not a triangle

$2+3<6$.

Curriculum reference: VC2M9SP03

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