

# A limiting circle theorem

Teacher notes

## Why use this resource?

This resource has a GeoGebra interactive to explore connections between circle theorems, and uses a geometric approach to limits so students can see why the alternate segment theorem must be true.

## Preparation

Ideally students will have access to a device that allows them to use the GeoGebra applet. Otherwise, the interactive should be displayed on the board.

## Possible approach

Let students explore the interactive before they try to answer the questions. When discussing the answers you may wish to highlight the idea of limits that appears in the deduction of the Alternate Segment theorem. Getting students used to thinking about limits in a geometric sense may help when they meet them in a more abstract form.

## Key questions

- What other circle theorems can you deduce from the diagram?

## Possible support

Ask students to explain, with reasoning, which angles are equal to each other.

## Possible extension

Can you prove this theorem in another way?