Parabella

Teacher notes

Why use this resource?

There's a beautiful result about parabolas in this resource.

Once students have started thinking about the problem, they will find it more accessible than it looks, and it's a useful opportunity to recognise the difference of two squares in a less routine context.

Possible approach

It is worth discussing the first result and the use of difference of two squares before moving on to the problem about midpoints.

Note that the position of A in the diagram means that a is negative, so it may be worth asking students to consider whether their argument holds for any points A and B on the parabola.

Key questions

- What is the gradient of the chords AB and OC?
- How do you find the coordinates of the midpoint of A and B?