

Can you find... cubic edition

Teacher notes

Why use this resource?

This resource invites students to identify cubic curves given certain properties. It develops the link between the geometrical and algebraic properties of cubics, as well as looking at the general form for cubic equations.

Possible approaches

If this is used before students are familiar at working with cubic equations, this could be done as a sketching exercise. For each question students could see how many different possible sketches can they find for each curve.

When students are more aware of the links between graphs and equations, we have seen that they often write down possible equations without thinking about the sketch. They should be encouraged to sketch the graphs, which makes it easier to recognise different possibilities, and to generalise their equations.

Key questions

- How many different possible sketches are there for each question?
- What is the general form for a cubic equation when it has three/one/repeated roots?
- Are any of the curves described unique?

Possible support

We have provided the [Explore](#) page which could be used by students who are finding the problems challenging. It has GeoGebra applets and questions that ask students to make links between the geometric properties of cubics and their equations. For example, it looks at what impact the coefficients have when the cubics are written in different forms.