

Chapter notes: 5 Transformations of graphs

Overview

The ideas in this chapter will be applied to trigonometric functions in section 8E. Some of the examples use exponent and log functions from chapter 2. It requires approximately two hours of teaching time.

Introductory problem

The reaction to this might well be that it is impossible. With some algebraic work it begins to seem simpler, and by the end of the chapter it will be easy. The worked solution is given at the end of the chapter, page 129; the idea being that students should be able to answer the question using the methods covered in the chapter.

5A, B, C Translations, stretches and reflections, p113

The use of colour in the equations should help with the common misunderstanding, when dealing with two equations for graphs, that the variables are 'equal' in both equations.

There are three skills which the students should be able to do:

1. From a transformation, draw a new graph.
2. From a transformation, deduce a change in an expression.
3. From a change in an expression, deduce a transformation.

These correspond to the three practise questions in each section. Although most students find the third type most difficult, a significant minority have real difficulty in the first type.

5D Consecutive transformations, p121

Examination questions mixing vertical and horizontal transformations are relatively rare, so this section does not necessarily need to be explored in detail if there are time constraints.