



AEM questions are taken from past exam papers - they have been carefully chosen to represent a typical exam question at each level of difficulty. If you can do these questions, you're ready to move onto past papers for this topic.

## APPRENTICE

A curve has equation  $y = 2x^2 + x - 10$ .

Determine the set of values of  $x$  for which the graph of the curve lies above the  $x$ -axis.

## EXPERT

Find the set of values of  $x$  for which

- a.  $3(2x + 1) > 5 - 2x$
- b.  $2x^2 - 7x + 3 > 0$
- c. both  $3(2x + 1) > 5 - 2x$  and  $2x^2 - 7x + 3 > 0$ .

## MASTER

The width of a rectangular sports pitch is  $x$  metres,  $x > 0$ . The length of the pitch is 20m more than its width. Given that the perimeter of the pitch must be less than 300m,

- a. Form a linear inequality in  $x$

Given that the area of the pitch must be greater than  $4800\text{m}^2$ ,

- b. Form a quadratic inequality in  $x$ .
- c. By solving your inequalities, find the set of possible values of  $x$ .