AQA Level 2 Further mathematics Further algebra

Section 2: Further equations

Crucial points

1. **Be careful with signs when using the elimination method**
   It's very easy to make mistakes!

2. **Think about which method to use**
   If one equation gives, say, y in terms of x, it is usually easier to use the substitution method rather than the elimination method. When one equation is quadratic, you must always use substitution.

3. **Remember that for non-linear simultaneous equations there may be more than one solution**
   When you solve simultaneous equations where one is linear and one is quadratic, you should normally end up with **two** solutions (unless the quadratic equation you end up with has a repeated root or no roots).

4. **Check your answers**
   For simultaneous equations, just substitute your solution into both of the original equations to make sure that it fits.
   When factorising a cubic, remember that you can check your answer by multiplying out.
   You can also check the solutions of a cubic equation by substitution.

5. **Find a method for factorising that suits you**
   Once you have found a factor of a cubic expression using the factor theorem, there are a number of different ways of dividing so that you can complete the factorisation. Several different methods are shown in the interactive resources on the website. Try some different methods and then stick with the one that you are most comfortable with.

6. **Take care with signs**
   Be careful about signs when using the factor theorem:

✘	***Wrong***	$f(2) = 0 \Rightarrow (x + 2)$ is a factor	✘
✓	***Right***	$f(2) = 0 \Rightarrow (x - 2)$ is a factor	✓