

## Section 2: Trigonometric equations

### Crucial points

- 1. Check that the roots are in the range asked for**  
Make sure that you check what range the roots should lie in.
- 2. Remember to factorise instead of cancelling**  
Never cancel terms like  $\sin \theta$  or  $\cos \theta$ . Always factorise instead. For example, in an equation like  $\sin \theta - \sin \theta \cos \theta = 0$ , do not cancel out the term  $\sin \theta$  because you will lose the roots to the equation  $\sin \theta = 0$ . Instead, take out the factor  $\sin \theta$  to give  $\sin \theta(1 - \cos \theta) = 0$ .
- 3. You must be able to draw trigonometric graphs accurately and know their properties**  
Make sure you know how to sketch the graphs of  $y = \cos x$ ,  $y = \sin x$  and  $y = \tan x$  and their properties.
- 4. Be careful when solving equations of the form  $\sin ax = k$**   
Think about the number of roots you expect to obtain.