



**Self-assessment: 9 Trigonometric equations and identities**

**1. Do not use a calculator to answer this question.**

Solve the equation  $\sin 3x = \frac{1}{2}$  for  $x \in [0, \pi]$ .

*(accessible to students on the path to grade 5 or 6) [4 marks]*

**2. Do not use a calculator to answer this question.**

Find the exact values of  $x$  in the interval  $[-\pi, \pi]$  which satisfy the equation  $2\sin^2 x - \cos x = 1$ .

*(accessible to students on the path to grade 5 or 6) [8 marks]*

**3. Do not use a calculator to answer this question.**

Solve the equation  $\sin^2 x = \sqrt{3} \sin x \cos x$  for  $0^\circ \leq x \leq 360^\circ$ .

*(accessible to students on the path to grade 5 or 6) [6 marks]*

**4. Do not use a calculator to answer this question.**

Solve the equation  $\cos 2\theta = \sin \theta$  for  $0^\circ \leq \theta \leq 360^\circ$ .

*(accessible to students on the path to grade 5 or 6) [6 marks]*