

Advanced Higher Maths  
SQA 2023 Paper 1  
Question 6

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- (a) Express  $z = 1 + \sqrt{3}i$  in polar form. 2
- (b) Hence, or otherwise, show that  $z^3$  is real. 2
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Answers:

- (a)  $2\left(\cos\frac{\pi}{3} + i\sin\frac{\pi}{3}\right)$
- (b) Apply de Moivre's Theorem and demonstrate that the imaginary part equals zero.