Advanced Higher Maths
SQA 2019 Specimen
Paper 2 Question 7

Let $z = \sqrt{3} - i$.

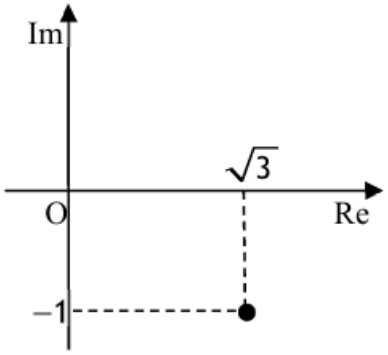
(a) Plot z on an Argand diagram. **1**

(b) Let $w = az$ where $a > 0$, $a \in \mathbb{R}$.
Express w in polar form. **2**

(c) Express w^8 in the form $ka^n\left(x + i\sqrt{y}\right)$ where $k, x, y \in \mathbb{Z}$. **3**

Answers:

(a)



(b) $w = 2a\left(\cos\left(-\frac{\pi}{6}\right) + i\sin\left(-\frac{\pi}{6}\right)\right)$

(c) $128a^8\left(-1 + i\sqrt{3}\right)$

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