

Question 2

(25 marks)

$z = -\sqrt{3} + i$, where $i^2 = -1$.

- (a)** Use De Moivre's Theorem to write z^4 in the form $a + b\sqrt{c}i$, where a, b , and $c \in \mathbb{Z}$.

- (b)** The complex number w is such that $|w| = 3$ and w makes an angle of 30° with the positive sense of the real axis. If $t = zw$, write t in its simplest form.