## Question 1

(a) $(-4+3 i)$ is one root of the equation $a z^{2}+b z+c=0$, where $a, b, c \in \mathbb{R}$, and $i^{2}=-1$. Write the other root.

(b) Use De Moivre's Theorem to express $(1+i)^{8}$ in its simplest form.

(c) $(1+i)$ is a root of the equation $z^{2}+(-2+i) z+3-i=0$.

Find its other root in the form $m+n i$, where $m, n \in \mathbb{R}$, and $i^{2}=-1$.

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