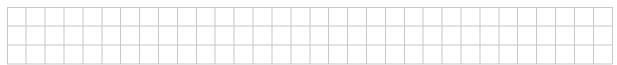
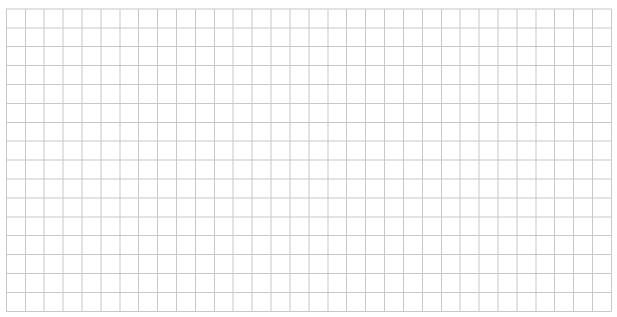
Question 1 (25 marks)

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

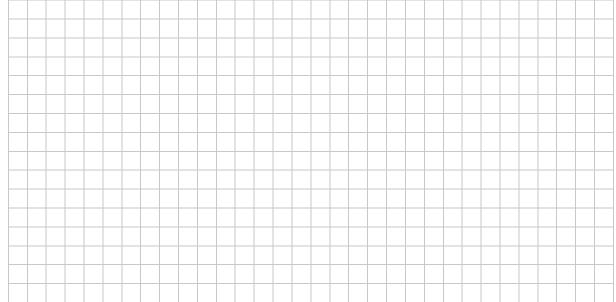


(b) Use De Moivre's Theorem to express $(1 + i)^8$ in its simplest form.



(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 + ni, where $m, n \in \mathbb{R}$, and $i^2 = -1$.



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