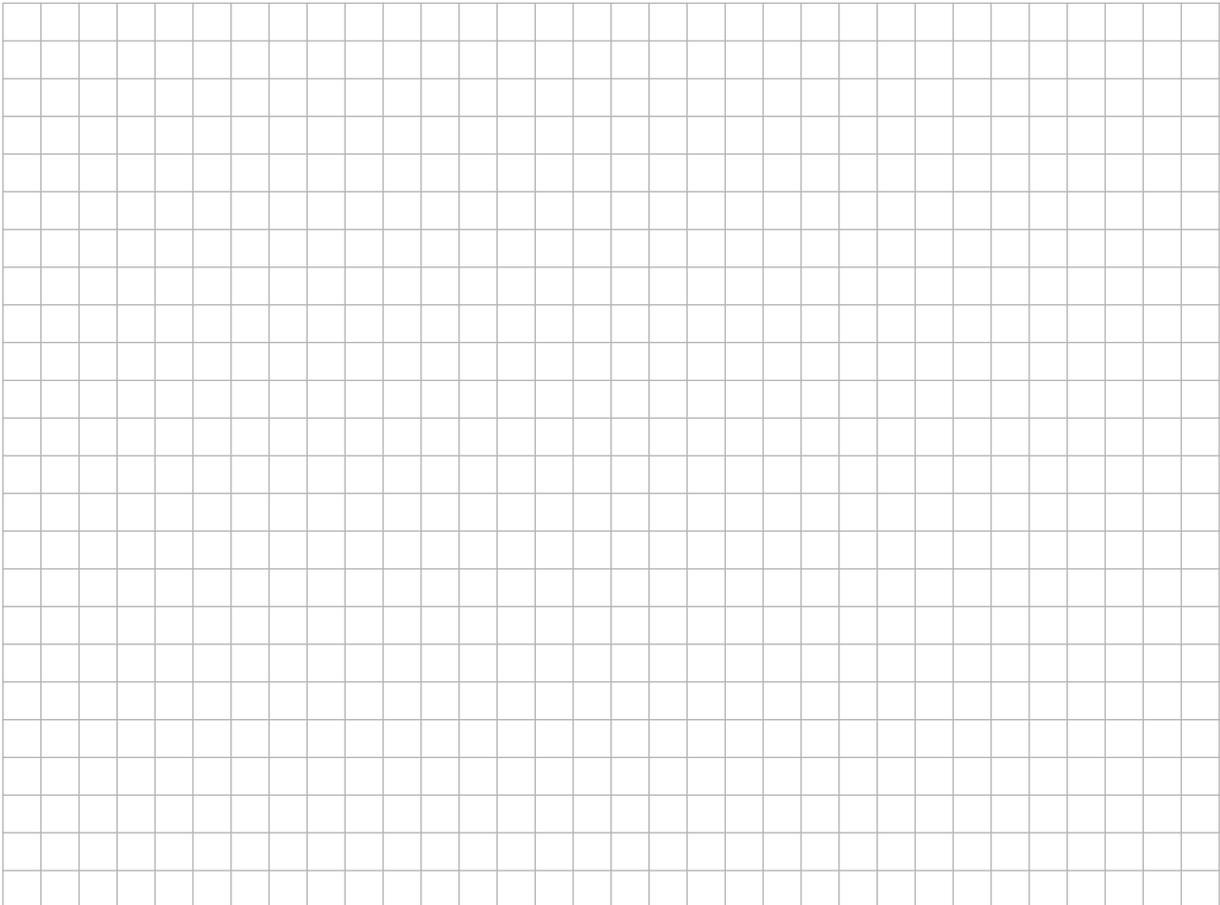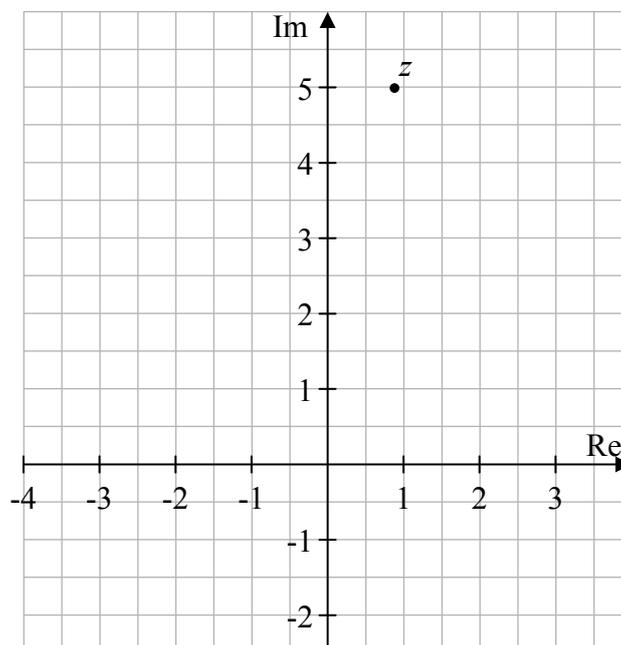**Question 3** (25 marks)

The complex number z has modulus $5\frac{1}{16}$ and argument $\dfrac{4\pi}{9}$.

(a) Find, in polar form, the four complex fourth roots of z.
(That is, find the four values of w for which $w^4 = z$.)

(b) z is marked on the Argand diagram below.
On the same diagram, show the four answers to part **(a)**.