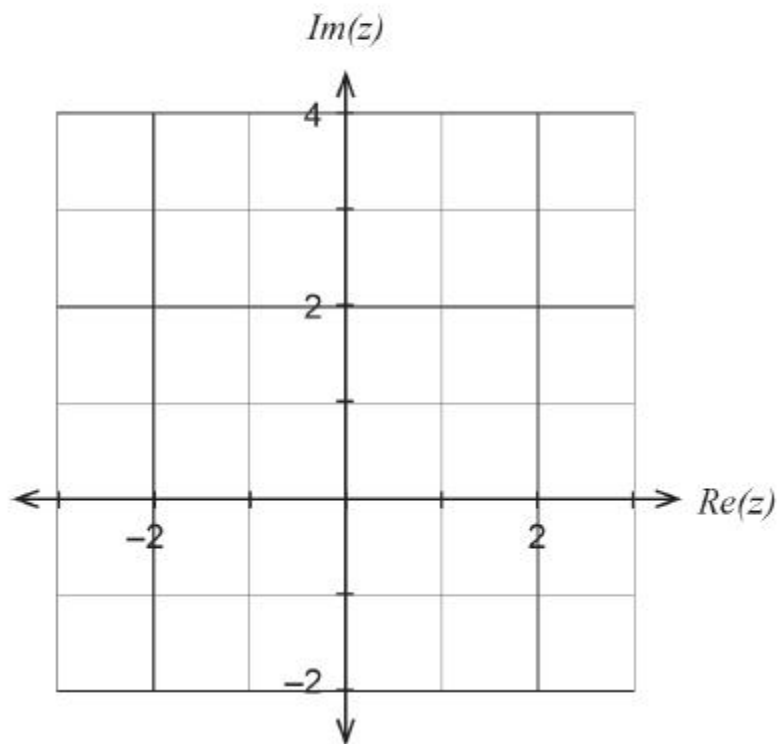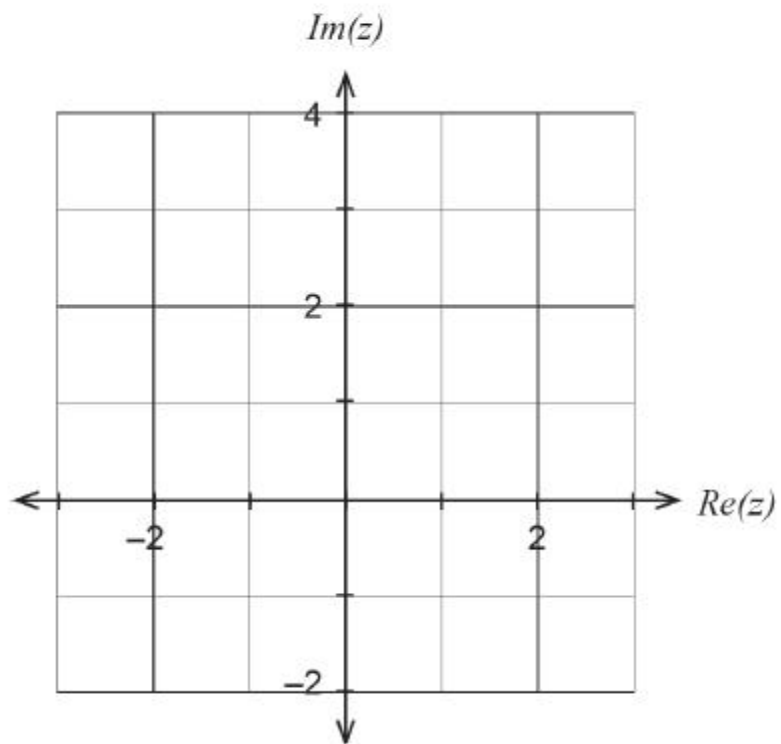**Question 10** (9 marks)

On the Argand planes below sketch the locus of the complex number $z = x + iy$ given by:

(a) $|z - 2i| = 1$. (3 marks)

(b) $|z - 1 + i| \geq |z + 1 - i|$.   (3 marks)

(c)   For the locus $|z - 2i| = 1$ from part (a), state the exact maximum value for $|z + 2|$.

(3 marks)