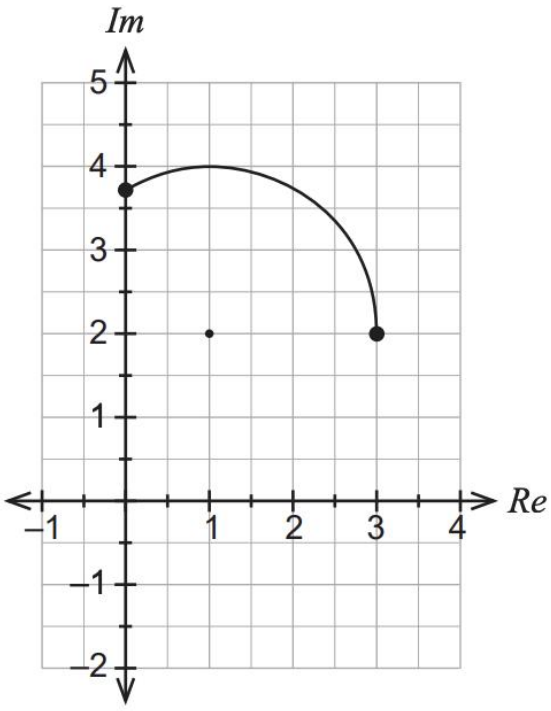
Question 10 **(7 marks)**

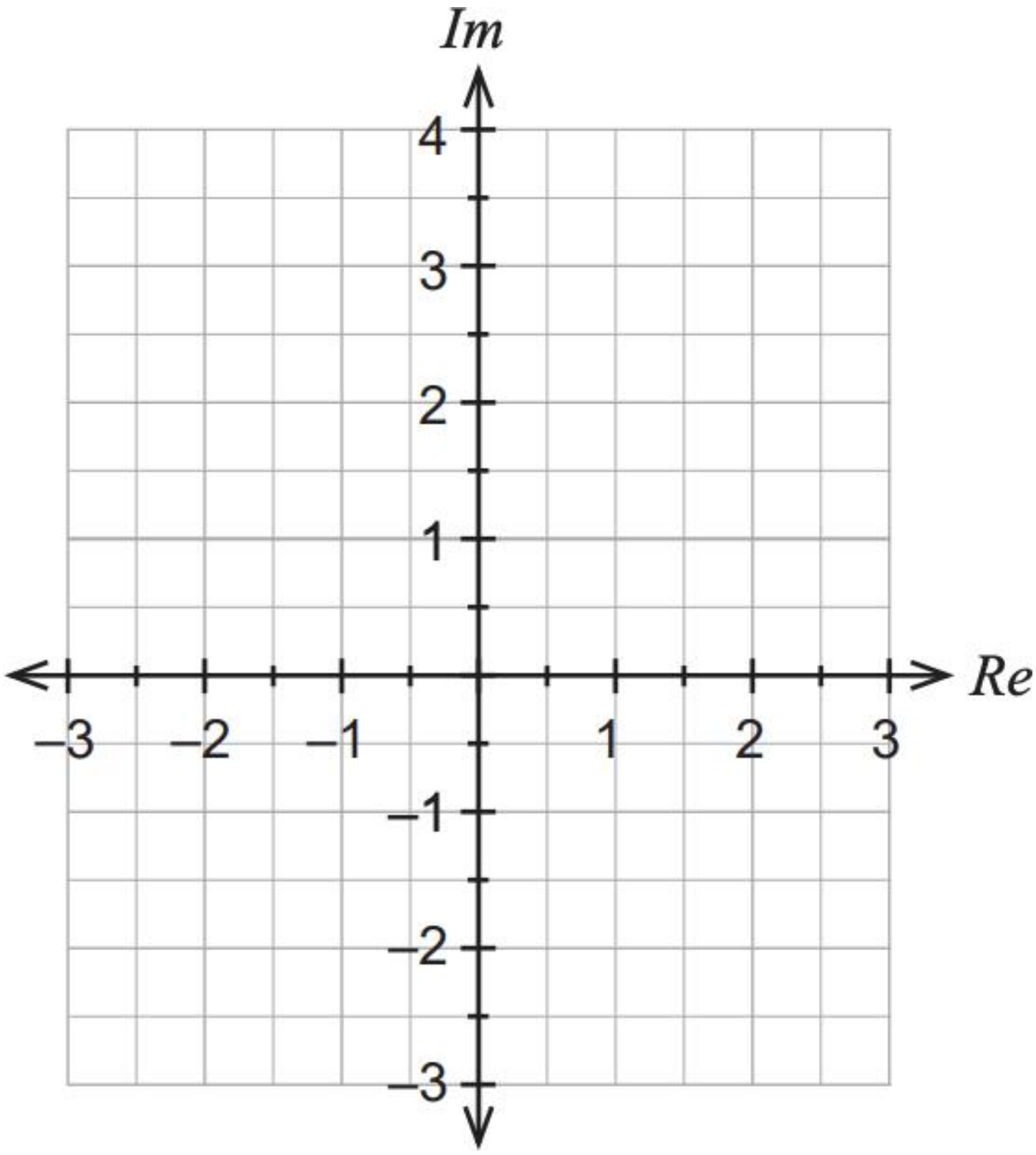
(a) The sketch of the locus of a complex number z has been shown below. Write equations or inequalities in terms of z (without using $x = Re(z)$ or $y = Im(z)$) for the indicated locus.

(4 marks)



(b) Sketch the locus of the equation $|z + 2| = |z - i| + \sqrt{5}$ in the Argand diagram below.

(3 marks)


Im
Re
4
3
2
1
−1
−2
−3
−3
−2
−1
1
2
3