

- (a)** The complex numbers v and w satisfy the equations

$$v + iw = 5 \quad \text{and} \quad (1 + 2i)v - w = 3i.$$

Solve the equations for v and w , giving your answers in the form $x + iy$, where x and y are real.

[6]

- (b)** **(i)** On an Argand diagram, sketch the locus of points representing complex numbers z satisfying $|z - 2 - 3i| = 1$. [2]
- (ii)** Calculate the least value of $\arg z$ for points on this locus. [2]