SOLVING QUADRATIC EQUATIONS WITH COMPLEX COEFFICIENTS

1 Find:

(a) $\sqrt{2i}$ (b) $\sqrt{3+4i}$ (c) $\sqrt{5-12i}$ (d) $\sqrt{-8+15i}$ (e) $\sqrt{-3-4i}$ (f) $\sqrt{1+i}$

2 Solve the following statements.

(a) $x^2 + 2x + 2i = 0$ **(b)** $x^2 - 4x + 2 - i = 0$ **(c)** $x^2 + 2(2 + i)x + 3 = 0$

(g) $ix^2 + 2ix + 3 = 0$ **(h)** $(2 - i)x^2 + 2x + 1 = 0$

3 **(a)** Expand and simplify the expression $(x-3)(x-1-i)(x-1+i)$.

(b) Hence, or otherwise, solve the equation $x^3 - 5x^2 + 8x = 6$.