Square Roots Of Complex Numbers Exam Questions (From OCR 4725)

Q1, (Jun 2005, Q4)

Use an algebraic method to find the square roots of the complex number $21 - 20i$. [6]

Q2, (Jan 2007, Q2)

Use an algebraic method to find the square roots of the complex number $15 + 8i$. [6]

Q3, (Jun 2007, Q10)

(i) Use an algebraic method to find the square roots of the complex number $16 + 30i$. [6]

(ii) Use your answers to part **(i)** to solve the equation $z^2 - 2z - (15 + 30i) = 0$, giving your answers in the form $x + iy$. [5]

Q4, (Jan 2009, Q10i,ii)

(i) Use an algebraic method to find the square roots of the complex number $2 + i\sqrt{5}$. Give your answers in the form $x + iy$, where x and y are exact real numbers. **[6]**

(ii) Hence find, in the form $x + iy$ where x and y are exact real numbers, the roots of the equation

$$z^4 - 4z^2 + 9 = 0.$$ **[4]**

Q5, (Jan 2012, Q3)

Use an algebraic method to find the square roots of $3 + (6\sqrt{2})i$. Give your answers in the form $x + iy$, where x and y are exact real numbers. **[6]**

Q6, (Jun 2013, Q3)

Use an algebraic method to find the square roots of $11 + (12\sqrt{5})i$. Give your answers in the form $x + iy$, where x and y are exact real numbers. **[6]**
