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**2.** Given that $x = \frac{3}{8} + \frac{\sqrt{71}}{8}\mathrm{i}$ is a root of the equation

$$4x^3 - 19x^2 + px + q = 0$$

(a) write down the other complex root of the equation.

**(1)**

Given that $x = 4$ is also a root of the equation,

(b) find the value of $p$ and the value of $q$.

**(4)**

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**Question 2 continued**

**Q2**

**(Total 5 marks)**