Practice worksheet | Complex Numbers

Factorisation over the complex numbers

Name: _____ Date: _____

6 questions | 15 marks

1. Factorise $z^2 - 2z + 5$ over $\mathbb{C}$. [2 marks]

2. Factorise $2z^2 + 8$ over $\mathbb{C}$. [2 marks]

3. Factorise $z^4 - 1$ completely over $\mathbb{C}$. [2 marks]

4. Solve $z^4 + 13z^2 + 36 = 0$. [3 marks]

5. Give the roots and multiplicities of $(z^2 + 1)^2(z - 2)$. [3 marks]

6. Why do $z^2 + 1$ and $z^2 - 1$ have different real factorisations but both split over $\mathbb{C}$? [3 marks]