

Writing Quadratic Functions from Complex Roots (ALG.CN.14)

Write a quadratic function for each set of complex roots.

1. $x = \pm 3i$ $f(x) = x^2 + 9$

2. $x = 2 + i, 2 - i$ $f(x) = x^2 - 4x + 5$

3. $x = 5 + \sqrt{2}i, 5 - \sqrt{2}i$ $f(x) = x^2 - 10x + 27$

4. $x = -3 + 7i, -3 - 7i$ $f(x) = x^2 + 6x + 58$

5. $x = -4 + \frac{2\sqrt{6}}{3}i, -4 - \frac{2\sqrt{6}}{3}i$ $f(x) = 3x^2 + 24x + 56$

6. $x = \frac{7}{2} + \frac{\sqrt{5}}{3}i, \frac{7}{2} - \frac{\sqrt{5}}{3}i$ $f(x) = 36x^2 - 252x + 461$