MCINTYRE MATHS · MATHEMATICS EXTENSION 2

Practice worksheet

Lesson 3 · Quadratic equations and square roots

Name: _____ Date: _____

Real coefficients

1. Solve.

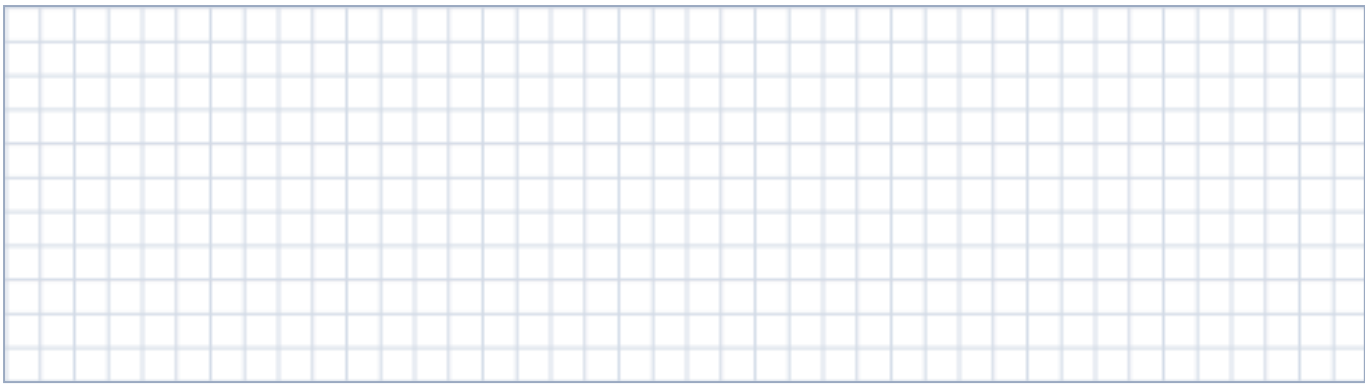
(a) $z^2 + 6z + 13 = 0$ (b) $2z^2 - 2z + 5 = 0$

2. Find a quadratic equation with real coefficients that has $-1 + 3i$ as a root.

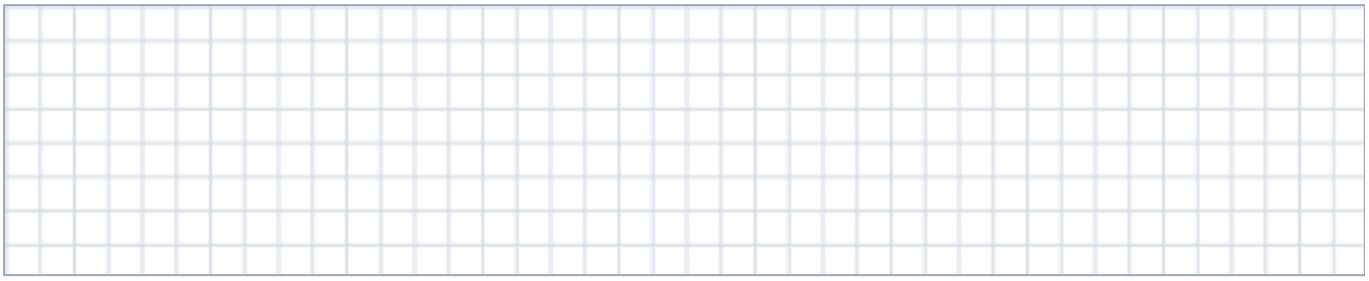
3. The equation $z^2 + pz + q = 0$, where $p, q \in \mathbb{R}$, has $1 - 2i$ as a root. Find p and q.

Square roots

4. Find the square roots of (a) -16, (b) $5 - 12i$, (c) $8 + 6i$.

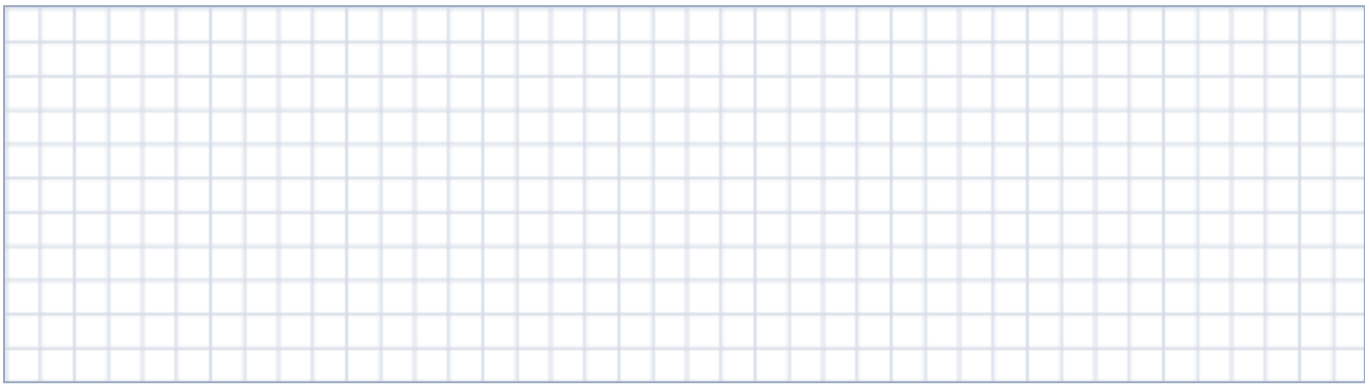


5. Find the square roots of $1 + i\sqrt{3}$ in exact form.



Complex coefficients

6. Solve $z^2 - (5 + i)z + (8 + i) = 0$.



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7. (a) Find the square roots of $5 + 12i$. (b) Hence solve $z^2 - 2z - 4 - 12i = 0$.

