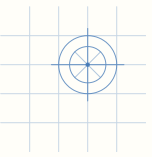


Quadratics with complex solutions — Complex roots



Name: _____

Date: _____

Solve each equation. Every answer is a complex number.

① $x^2 - 4x + 68 = 0$

$$\begin{aligned}b^2 - 4ac &= -256 \\x &= (4 \pm \sqrt{-256}) \div 2 \\x &= (4 \pm 16i) \div 2 \\x &= 2 \pm 8i\end{aligned}$$

② $x^2 + 10x + 41 = 0$

③ $x^2 - 10x + 89 = 0$

④ $x^2 + 2x + 50 = 0$

⑤ $x^2 - 4x + 8 = 0$

⑥ $x^2 + 8x + 65 = 0$

⑦ $x^2 - 8x + 80 = 0$

⑧ $x^2 + 6x + 18 = 0$



Quadratics with complex solutions · Complex roots — Answer key



1. $x^2 - 4x + 68 = 0 \rightarrow x = 2 \pm 8i$

2. $x^2 + 10x + 41 = 0 \rightarrow x = -5 \pm 4i$

3. $x^2 - 10x + 89 = 0 \rightarrow x = 5 \pm 8i$

4. $x^2 + 2x + 50 = 0 \rightarrow x = -1 \pm 7i$

5. $x^2 - 4x + 8 = 0 \rightarrow x = 2 \pm 2i$

6. $x^2 + 8x + 65 = 0 \rightarrow x = -4 \pm 7i$

7. $x^2 - 8x + 80 = 0 \rightarrow x = 4 \pm 8i$

8. $x^2 + 6x + 18 = 0 \rightarrow x = -3 \pm 3i$