Complex numbers: arithmetic and quadratics

Answers

Further Maths topic practice

This topic online

Q	Answer	Marks
1	**a)** -1 + 6i **b)** 14 + 23i **c)** -7 - 24i	4
2	7/13 + (17/13)i	3
3	z = -3/2 + (1/2)i, z = -3/2 - (1/2)i	3
4	z = 4 - i	5
5	**a)** 2 + i **b)** p = -4, q = 5	4
6	**a)** w = (a - 8)/5 + ((2a + 4)/5)i **b)** a = 8, w = 4i **c)** a = -2	5
7	**a)** $\frac{2}{5} - \frac{1}{5}i$ **b)** k = 5, w = 4	5
8	z = 2 + 4i or z = 2 - 2i	6
9	**a)** 5 - 2i and -5 + 2i **b)** z = 4 - i or z = -1 + i	7
10	z = 3 + 2i, w = 2 - i	6
11	**a)** -1 < k < 4 **b)** x = -2 + √6 i or x = -2 - √6 i **c)** -4	8
12	**a)** 2 + 3i and -2 - 3i **b)** z = 2 + 3i, 2 - 3i, -2 + 3i, -2 - 3i **c)** $(z^2 - 4z + 13)(z^2 + 4z + 13)$	9

Full worked solutions, written out by hand, are on the solutions sheet for this topic.

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