

0.1 Introduction to Imaginary and Complex Numbers

Problem Set

1. Express each of the following in the form $a + ib$

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|---------------------------|---------------------------|------------------------|
| (a) $(2 + 3i) + (8 - i)$ | (c) $(4 + 4i) + (8 - 4i)$ | (e) $(2 + 3i)(8 + i)$ |
| (b) $(2 + i) + (-2 - 4i)$ | (d) $(4 + 4i) - (8 - 4i)$ | (f) $(4 + 4i)(8 - 4i)$ |

2. Find each of the following

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|------------------|------------------|-----------------|
| (a) $(2 + 2i)^*$ | (b) $(2 - 2i)^*$ | (c) $(1 - i)^*$ |
|------------------|------------------|-----------------|

Answers

1.

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|---------------|---------------|----------------|
| (a) $10 + 2i$ | (c) 12 | (e) $13 + 26i$ |
| (b) $-3i$ | (d) $-4 + 8i$ | (f) $48 + 16i$ |

2.

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|--------------|--------------|-------------|
| (a) $2 - 2i$ | (b) $2 + 2i$ | (c) $1 + i$ |
|--------------|--------------|-------------|