0.1 Introduction to Imaginary and Complex Numbers Problem Set

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

(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

(a) $(2 + 2i)^\star$ (b) $(2 - 2i)^\star$ (c) $(1 - i)^\star$

Answers

1.

(a) $10 + 2i$ (c) 12 (e) $13 + 26i$

(b) $-3i$ (d) $-4 + 8i$ (f) $48 + 16i$

2.

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

1a) $10+2i$

2a) complex conjugate

$(2+2i)^* \rightarrow (2-2i)$