Addition and Subtraction of Complex Numbers

Addition and subtraction of complex numbers follow the same rules as combining like terms.

I. Model Problems

In these examples you will add and subtract complex numbers.

Example 1: $\mathbf{(2+15i)+(18+4i)}$

Group the real part of the complex number and the imaginary part of the complex number.

Simplify.

$$(2+15i)+(18+4i)$$
$$(2+18)+(15i+4i)$$
$$20+19i$$

Answer: $\mathbf{20+19i}$

Example 2: $\mathbf{(8-15i)-(10-3i)}$

Distribute the negative.

Group the real part of the complex number and the imaginary part of the complex number.

Simplify.

$$(8-15i)-(10-3i)$$
$$8-15i-10+3i$$
$$(8-10)+(-15i+3i)$$
$$-2+(-12i)$$

Answer: $\mathbf{-2-11i}$

II. Practice Problems

Simplify.

1. $(3+4i)+(6+7i)$
2. $(16-3i)+(4+2i)$
3. $(18+7i)+(-3+16i)$
4. $(-12-4i)+(-10-3i)$
5. $(-8+3i)+(-7-2i)$
6. $(-63-17i)+(44+17i)$
7. $(-2+15i)+(2-15i)$
8. $(45-3i)+(-18-7i)+(-27+16i)$
9. $(3-17i)+(16+5i)+(-4+2i)$
10. $(14+26i)-(7+3i)$
11. $(24+16i)-(15+4i)$
12. $(-144+12i)-(24+16i)$
13. $(14-3i)-(20+2i)$
14. $(-24-6i)-(-28+6i)$
15. $(-12+4i)-(-12+4i)$
16. $(3-20i)-(14+6i)-(8-2i)$
17. $(13+14i)—12-3i-(25-6i)$
18. $(-7+4i)-(3-2i)-(-12+2i)$
19. $(20+2i)-(4-6i)-(-12+3i)$
20. $(142-72i)-(-16+12i)-(115-8i)$
21. $(17-14i)+(3+6i)-(12+10i)$
22. $(14+3i)-(-12-7i)+(6+2i)$