Answer key

The method: Adding, subtracting, and multiplying complex numbers

Combine the real parts and the i parts. Multiply like binomials, then replace i^2 with -1. Write the answer as a + bi.

$$(-5 + 6i) + (-1 + 7i) = (-5 + (-1)) + (6 + 7)i = -6 + 13i$$

real parts together, i parts together

$$(-8 + 7i)(1 - 8i) = -8 + 64i + 7i - 56i^2 = -8 + 71i + 56 = 48 + 71i$$

first, outer, inner, last; then $i^2 = -1$

$$(1 - 5i) - (-1 + 6i) = (1 - (-1)) + (-5 - 6)i = 2 - 11i$$

real parts together, i parts together; subtract both parts

Problems 1 and 2 worked out · Version 0A

$$(3 - 5i)(3 + 5i) = 9 + 15i - 15i - 25i^2 = 9 + 25 = 34$$

first, outer, inner, last; then $i^2 = -1$

$$(-6 + 5i)(-6 - 5i) = 36 + 30i - 30i - 25i^2 = 36 + 25 = 61$$

first, outer, inner, last; then $i^2 = -1$

Adding, subtracting, and multiplying complex num…

1) 34 2) 61 3) −26 + 36i 4) −66 + 30i 5) 113
6) −1 − 9i 7) 5 8) −8 + 5i 9) 5 − 3i 10) 37
11) 50 12) −18 − 76i 13) −2 + i 14) 20
15) 18 + 4i 16) −58 + 14i 17) −8 − 6i 18) 37
19) −2 − 4i 20) 23 + 41i 21) −11 + 12i