

Correct. Distribute the subtraction sign to both terms in the subtrahend. Rearrange the terms to put like terms together, and then combine like terms.

$$(4 + 5i) - (6 - i) = 4 + 5i - 6 + i = 4 - 6 + 5i + i = -2 + 6i$$

The imaginary part is $6i$.