

Simplify the following problems.

1. $(5 + 4i) + (7 - 9i)$

2. $(2 + i)(8 + 3i)$

3. $(6 + 2i)^2$

4. $\frac{2}{(9 - 4i)}$

5. Show that $(3 + 2i)^2(3 - 2i)^2 = 169$.

6. Given the problem, $(3 + 5i)(8 + 7i)$, Vicki obtained an answer of $(24 + 12i)$. Is this correct? If it is not correct, explain what steps Vicki did incorrectly and what is the correct answer?

7. What is the conjugate of $(2 + 3i)$ and what is the product when you multiply $(2 + 3i)$ by its conjugate?