

Math 1513 - College Algebra

Quiz #4 - 2018.08.29

Solutions

1. Perform the following complex multiplication. Be sure to express your final answer in $a + ib$ form:

$$\begin{aligned}(2 - 4i) \cdot (3 + 5i) &= 2 \cdot 3 - 4i \cdot 3 + 2 \cdot 5i - 4i \cdot 5i \\ &= 6 - 12i + 10i - 20i^2 \\ &= 6 - 12i + 10i + 20 \\ &= 26 - 2i\end{aligned}$$

2. Express i^6 as a complex number with no exponents.

We use the fact that $i^2 = -1$, then $i^6 = i^2 \cdot i^2 \cdot i^2 = (-1)^3 = -1 = -1 + 0i$.