

Functions & Trig.
Complex Numbers HW

Name _____

1.) Simplify: $xi(i-7i)^2$

2.) Elizabeth tried to find the product of $(2+4i)$ and $(3-i)$, and her work is shown below.

$$\begin{aligned}(2+4i)(3-i) &= 6-2i+12i-4i^2 \\ &= 6+10i-4i^2 \\ &= 6+10i-4(1) \\ &= 6+10i-4 \\ &= 2+10i\end{aligned}$$

Identify the error in the process shown and determine the correct product of $(2+4i)$ and $(3-i)$.

3.) The expression $(x+i)^2 - (x-i)^2$ is equivalent to

- (a) 0 (b) -2 (c) $-2 + 4xi$ (d) $4xi$

4.) The expression $x(3i^2)^3 + 2xi^{12}$ is equivalent to

- (a) $2x + 27xi$ (b) $-7x$ (c) $-25x$ (d) $-29x$