8-2 Review of Complex Numbers

Write each of the following as a pure imaginary number.

$\sqrt{-16}$ $\sqrt{-18}$ $\sqrt{-3}$

Write each in Standard Form.

$2-\sqrt{-25}$ $3+\sqrt{-50}$ $\dfrac{4-\sqrt{-12}}{2}$

Add and subtract the following

$\left(4-\sqrt{-4}\right)+\left(-7+\sqrt{-9}\right)$

$\left(4-2i\right)-\left(-2+7i\right)$

Multiply the following

$$4i(3-6i)$$

$$(-2+4i)(3-i)$$

Remember from before:

$$\sqrt[n]{a}\sqrt[n]{b}=\sqrt[n]{ab}$$

only works when $\sqrt[n]{a}$ and $\sqrt[n]{b}$ are real numbers

This means that

$$\sqrt{a}\sqrt{b}\neq\sqrt{ab} \text{ if } a<0 \text{ or } b<0$$

Multiply

$$\sqrt{-25}\sqrt{-4}$$

$$\left(2+\sqrt{-16}\right)\left(1-\sqrt{-4}\right)$$

Complex Conjugate

If $a+bi$ is a complex number, then its conjugate is defined as $a-bi$

$3+2i$ $\quad$ $4-3i$ $\quad$ $-16+32i$

$-17i$ $\quad$ $4i$