

Multiply and Divide Complex

- Remove the i first before you multiply

ex. $(\sqrt{-4}) \cdot \sqrt{-8} \neq \sqrt{32}$
 $2i \cdot 2i\sqrt{2} = 4i^2\sqrt{2} = 4 \cdot -1 \sqrt{2} = -4\sqrt{2}$

ex. $-2i \cdot 6i = -12i^2 = -12 \cdot -1 = 12$

ex. $(2 + 3i)(4 - i) = 8 + 10i + 3$
 $8 - 2i + 12i - 3i^2 = 11 + 10i$

ex. $(5 + 5i)^2 = (5 + 5i)(5 + 5i)$

$25 + 25i + 25i + 25i^2$
 $25 + 50i - 25$

$(4x^3)^2$
 $4x^3 \cdot 4x^3$
 $16x^6$

$(4x^3 + x^2)^2$

More Ex.

Rationalize

$$\text{ex. } \frac{3(2-i)}{(2+i)(2-i)} = \frac{6-3i}{4-\cancel{2i}+\cancel{2i}-i^2} = \frac{6-3i}{4+1}$$

$$\text{ex. } \frac{(4-3i)}{(4+3i)} =$$

$$\text{ex. } \frac{7-i}{2i} = \frac{7-i}{i} \cdot \frac{i}{i} = \frac{7i-i^2}{2i^2} = \frac{7i-1}{2(-1)}$$

$$= \frac{1+7i}{-2} = \frac{1+7i}{-2} = \frac{-1-7i}{2}$$