

9, 27, 24, 15, 18

9.  $-4i(-2 + i)$

$8i - 4i^2$

$4 + 8i$

15.  $(-4 + i)(8 + 5i)$

$-32 - 20i + 8i + 5i^2$

$-32 - 12i - 5$

$-37 - 12i$

18.  $(3 + 4i)(-2 + 3i)$

$-6 + 9i - 8i + 12i^2$

$-6 + i - 12$

$-18 + i$

24.  $(3 + i\sqrt{5})^2(3 + i\sqrt{5})$

$9 + 3i\sqrt{5} + 3i\sqrt{5} + i^2\sqrt{25}$

$9 + 6i\sqrt{5} - 5$

$4 + 6i\sqrt{5}$

27.  $(\sqrt{2} - \sqrt{-5})(\sqrt{2} + \sqrt{-5})$

$(\sqrt{2} - i\sqrt{5})(\sqrt{2} + i\sqrt{5})$

$2 + i\sqrt{10} - i\sqrt{10} - i^2 \cdot 5$

$2 + 5 = 7$

HW Assessment  
4/21

21.  $(2-4i)^2$

SHOW WORK!!

## Complex conjugates

to make an imaginary number real, we square!

$$(4i)^2 = 16i^2 = -16$$

to make complex numbers real.

$$(4 + 5i)^2$$

$$(4 + 5i)(4 + 5i)$$

$$16 + 20i + 20i + 25i^2$$

$$16 + 40i - 25$$

$$-9 + 40i$$

$$(4 + 5i)(4 - 5i)$$

complex conjugate

$$16 - \cancel{20i} + \cancel{20i} - 25i^2$$

$$16 + 25 = 41$$

$$3 - 2i \rightarrow 3 + 2i$$

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

$$9 + 6i - 6i - 4i^2$$

$$9 + 4 = 13$$

$$7 - 3i \rightarrow 7 + 3i$$

$$49 + 9 = 58$$

$$5 - i\sqrt{3} \rightarrow 5 + i\sqrt{3}$$

$$25 + 3 = 28$$

your turn

find conjugate then  
multiply

1.  $6 - i$

2.  $4 + 7i$