

Book: 5, 6, 4, 3 powers of i : 5,

$$3. (5-7i) - (8+2i)$$

$$5-7i-8-2i$$

$$\underline{-3-9i}$$

$$4. (6-4i) - (-4+i)$$

$$6-4i+4-i$$

$$\underline{10-5i}$$

$$5. 3(-2+i) - 4(3-2i)$$

$$-6+3i-12+8i$$

$$\underline{-18+11i}$$

$$6. 2(-1+6i) - 3(2+5i)$$

$$-2+12i-6-15i$$

$$\underline{-8-3i}$$

powers of i

$$5. \underline{i^{214} = -1}$$

$$\frac{214}{4} = 53.5$$

$$i = i \quad .25$$

$$i^2 = -1 \quad .5$$

$$i^3 = -i \quad .75$$

$$i^4 = 1 \quad 1.0$$

HW Assessment

powers of i

3. $i^{27} =$

Multiplying Complex numbers!

almost exactly like polynomials
except $i^2 = -1$

$$5i(5 - 2i)$$

$$25i - 10i^2$$

$$25i + 10$$

$$\boxed{10 + 25i}$$

$$(5 - 2i)(3 + 4i)$$

$$15 + 20i - 6i - 8i^2$$

$$15 + 14i + 8$$

$$\boxed{23 + 14i}$$

$$(7 - 3i)(7 + 3i)$$

$$49 + 21i - 21i - 9i^2$$

$$49 + 9 \quad \xrightarrow{-9(-1)}$$

$$\boxed{58}$$

$$(4-i)^2$$

$$(4-i)(4-i)$$

$$16 - 4i - 4i + i^2$$

$$16 - 8i - 1$$

$$\boxed{15 - 8i}$$

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

$$(5 + i\sqrt{3})(5 + i\sqrt{3})$$

$$25 + 5i\sqrt{3} + 5i\sqrt{3} + \underbrace{i^2 \cdot 3}_{-3}$$

$$22 + 10i\sqrt{3}$$

$$(\sqrt{3} + \sqrt{-7})(\sqrt{3} - \sqrt{-7})$$

$$\boxed{(\sqrt{3} + i\sqrt{7})(\sqrt{3} - i\sqrt{7})}$$

$$3 - \underbrace{i\sqrt{21} + i\sqrt{21}}_0 - i^2 \cdot 7$$

$$-(-1)7$$

$$+7$$

$$\boxed{10}$$

your turn

$$1) -3i(2+i)$$

$$2) (5-2i)(5+2i)$$

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