

Homework Questions

$$22, 2, 10, 14, 18$$

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

$$\underline{-2 - 6i}$$

$$10. -2i(1 - 3i)$$

$$-2i + 6i^2$$

$$-2i - 6$$

$$\underline{-6 - 2i}$$

$$14. (-5 + 3i)(2 - 3i)$$

$$-10 + 15i + 6i - 9i^2$$

$$-10 + 21i + 9$$

$$\underline{-1 + 21i}$$

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

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

$$-6 + i - 12$$

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

$$22. (6 - 7i)^2$$

$$(6 - 7i)(6 - 7i)$$

$$36 - 42i - 42i + 49i^2$$

$$36 - 84i + 49i^2$$

$$36 - 84i - 49$$

$$\underline{-13 - 84i}$$

Homework Assessment

3/25/10

16. $(3 - 7i)(2 + 4i)$

Raising i to powers

$$\begin{aligned}
 i &= i \\
 i^2 &= -1 \quad 2/4 = .5 \\
 i^3 &= i^2 \cdot i = -i \quad 3/4 = .75 \\
 i^4 &= i^2 \cdot i^2 = 1 \quad 4/4 = 1 \\
 i^5 &= i^4 \cdot i = i \quad 5/4 = 1.25 \\
 i^6 &= -1 \quad 6/4 = 1.5 \\
 i^7 &= -i \quad 7/4 = 1.75 \\
 i^8 &= 1 \quad 8/4 = 2 \\
 i^9 &= i \quad 9/4 = 2.25
 \end{aligned}$$

$$\begin{aligned}
 & i^{43} \\
 & \frac{\text{exponent}}{4} \\
 & 1 \rightarrow \text{whole} \\
 & i \leftarrow .25 \\
 & -1 \leftarrow .5 \\
 & -i \leftarrow .75
 \end{aligned}$$

$$i^{43} \rightarrow \frac{43}{4} = 10.75$$

$$i^{43} = -i$$

Raising i 's to powers

1) divide the exponent by 4

2) whole $\rightarrow 1$

.25 $\rightarrow i$

.5 $\rightarrow -1$

.75 $\rightarrow -i$

Work on Imaginary Review Worksheet
Additional Problems.

18. i^{37} 19. i^{214} 20. i^{132}
eee *!!* *eee*

QUIZ TOMORROW!!