## Kerry Ojakian's MTH 28 Class Class Assignment #18

- 1. Solve the following (complex solutions allowed).
  - (a)  $x^2 9 = 0$  (b)  $x^2 + 9 = 0$
- 2. Simplify the following expressions.
  - (a)  $\mathbf{i}^9$
  - (b)  $\sqrt{-24}$
- 3. Evaluate/simplify or state if undefined (and why):  $\sqrt[7]{-1}$
- 4. Simplify.
  - (a)  $i^7$  (b)  $i^{82}$
- 5. Simplify.

(a)  $\sqrt{-16}$  (b)  $\sqrt{-20}$ 

6. Simplify.  $-\mathbf{i} + 7 - 5\mathbf{i}^3 + 3\mathbf{i} + 4\mathbf{i}^2$  7. Perform the operation and simplify.

(a) 
$$14\mathbf{i} + 1 + (-3\mathbf{i}) + 17$$
 (b)  $(2 - 3\mathbf{i}) - (1 - 4\mathbf{i})$ 

8. Simplify each expression:

(a) 
$$-\mathbf{i} + 12 - \mathbf{i}^2 + 5\mathbf{i} - 3\mathbf{i}^4 + 4\mathbf{i}^3$$
 (b)  $(-2 + 9\mathbf{i}) - (11 - 5\mathbf{i})$ 

9. Simplify each expression:

(a) 
$$-\mathbf{i} + 12 - \mathbf{i}^2 + 5\mathbf{i} - 3\mathbf{i}^4 + 4\mathbf{i}^3$$
 (b)  $(-2 + 9\mathbf{i}) - (11 - 5\mathbf{i})$ 

- 10. Perform the operation and simplify.
  - (a)  $(2-4i) \cdot (-3i)$
  - (b) (5-2i)(2-3i)
- 11. Simplify each expression:
  - (a)  $4\mathbf{i}(3-10\mathbf{i})$  (b)  $(2-3\mathbf{i})^2$

12. Perform the operation and simplify.

(a) 
$$(1+5i)(-2i)$$
 (b)  $(-3-i)(2-4i)$ 

13. Simplify.

(a) 
$$\frac{6}{9\mathbf{i}}$$
  
(b)  $\frac{4}{1-\mathbf{i}}$ 

14. Perform the operation and simplify.

(a)	21	(1)	15
	$\overline{7i}$	(b) $\overline{2}$	+3i