

Name \_\_\_\_\_ Student No. \_\_\_\_\_ G\_\_\_\_/\_\_\_\_ Date: \_\_\_\_\_ Score: \_\_\_\_\_  
 Nickname: \_\_\_\_\_ Quiz No.: \_\_\_\_\_

## Graphing Polynomial

**A. Identify the properties of the given polynomial equation then sketch its graph.**

1)  $f(x) = x^3 + 5x^2 + 7x + 3$

2)  $f(x) = -x^4 - 2x^3 + 7x^2 + 8x - 12$

FTA: Atmost 3  
 Factored form:  $(x + 1)^2 (x + 3)$   
 Actual roots: -3, -1 mul. 2  
 End Behavior:

$$f(x) \rightarrow -\infty \text{ as } x \rightarrow -\infty$$

$$f(x) \rightarrow \infty \text{ as } x \rightarrow \infty$$

Graph:

FTA: Atmost 4  
 Factored form:  $-(x - 2)(x - 1)(x + 2)(x + 3)$   
 Actual roots: -3, -2, 1, 2  
 End Behavior:

$$f(x) \rightarrow -\infty \text{ as } x \rightarrow -\infty$$

$$f(x) \rightarrow -\infty \text{ as } x \rightarrow \infty$$

Graph:

