

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)  $f(x) = x^3 + 2x^2 - x - 2$

2)  $f(x) = x^4 - 10x^2 + 9$

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

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

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

Graph:

