

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

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

FTA:  
Factored form:  
Actual roots:  
End Behavior:

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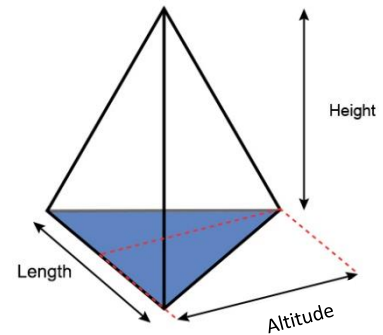
Graph:

Graph:

Solve the given problems and show your complete solution (3 points each).

1. When  $x^4 + x^3 - Px^2 - 4x + R$  is divided by  $x - 1$ , the remainder is 12. When divided by  $x - 2$ , the remainder is 0. Find  $R$  and  $P$ .

2. Find the height of a triangular-based pyramid, including the length and altitude of the base if the volume of the pyramid is 32 cubic feet and the length of the base is 4 more than the height and the altitude is 2 less than twice the height.



3. A ball was thrown upward with initial velocity of  $25m/s$  from the ground. If the acceleration of gravity is  $10m/s^2$ ,
  - a. what is the maximum height?
  - b. How long will it take the ball to reach the ground?
4. A class trip with a fixed cost of \$6000 will be evenly divided to the number of attendees. If there had been 10 more attendees, the cost per attendee would be \$30 less. How many joined the trip?