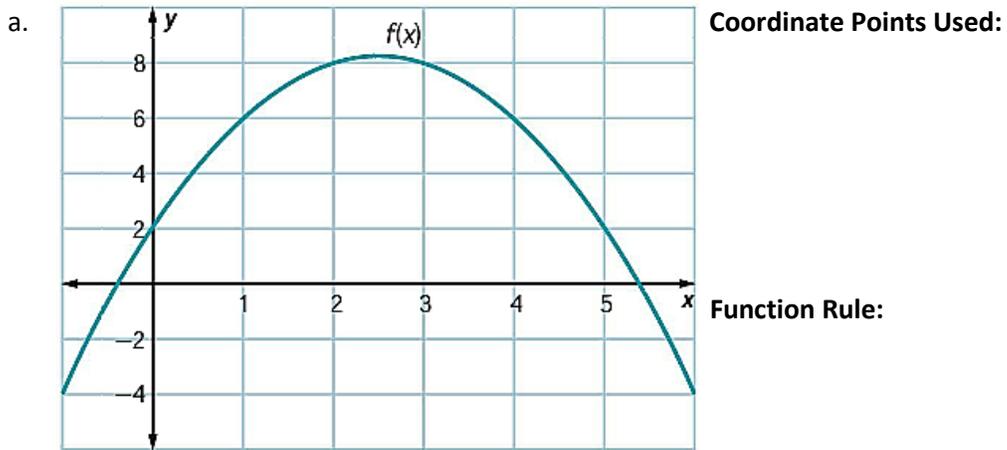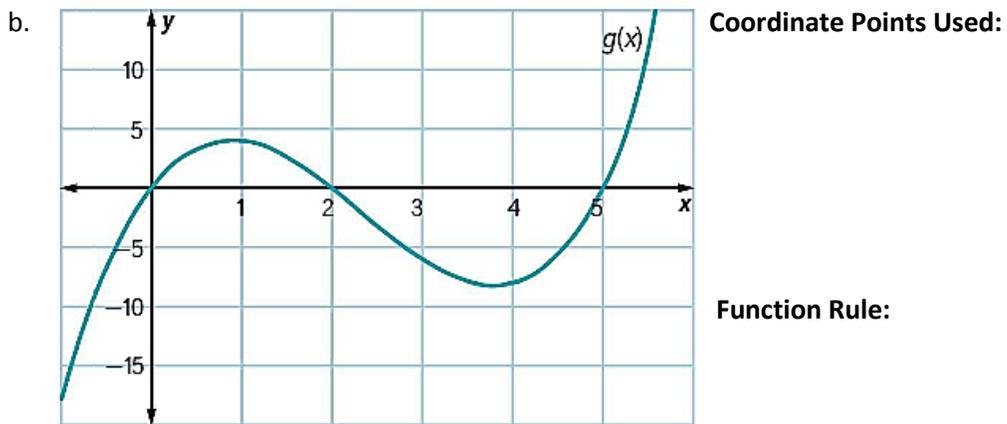**Long-term Assignment #6**   **Due**_____
28 total points

1) In parts a-d, use a curve-fitting tool and/or algebraic reasoning to find rules for functions $f(x)$, $g(x)$, $h(x)$, and $j(x)$ that model the given patterns. In each case report the graph points used as the basis of your curve-fitting [1 pt], the rule of the modeling function [1 pt], and your reasons for choosing a model of that type [2 pts].
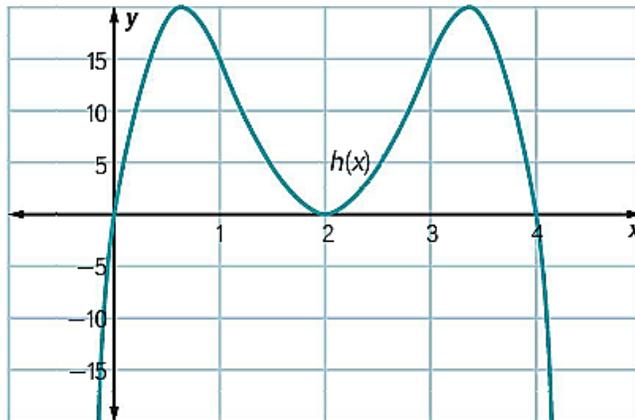
a.

Coordinate Points Used:

Function Rule:

Reasons for choosing the model type:

b.

Coordinate Points Used:

Function Rule:

Reasons for choosing the model type:

Long-term Assignment #6   *Due*_____
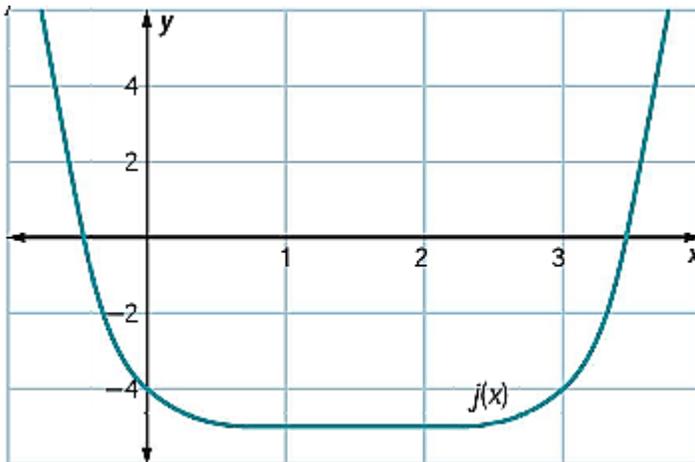*28 total points*

c.

Coordinate Points Used:

Function Rule:

Reasons for choosing the model type:

d.

Coordinate Points Used:

Function Rule:

Reasons for choosing model type:

Long-term Assignment #6   *Due*_____
28 total points

2.   Graph each function and estimate the value(s) of all local maximum and local minimum points.
        Include a sketch of your graph.

   a. $f(x) = 2x^2 + 4x + 1$ **(2 points)**

   b. $g(x) = x^3 - 5x^2 + 5x + 7$ **(3 points)**

   c. $h(x) = x^3 - 6x^2 + 12x - 8$ **(3 points)**

   d. $s(x) = x^4 - 8x^3 + 20x^2 - 16x$ **(4 points)**