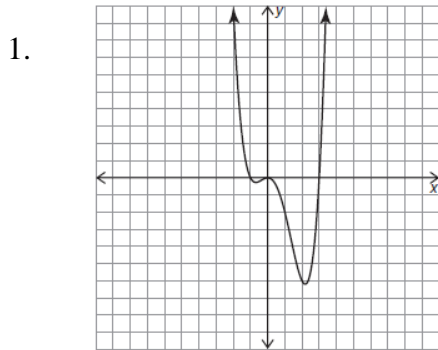


**Secondary Math III**  
**Key Characteristics**  
**Assignment 3.3**

Name: \_\_\_\_\_  
 Period: \_\_\_\_\_

Carnegie Book: Pg. 183 #8 (a-g) Pg. 185-186 #1 a & d

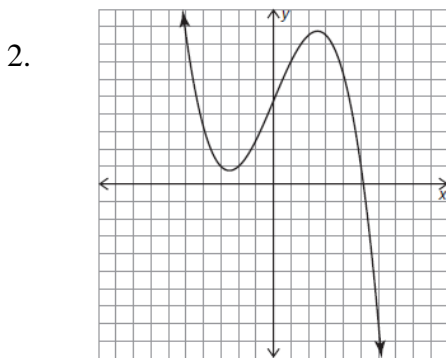
Circle the function(s) that could model each graph. Describe your reasoning for eliminating or choosing each function.



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

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

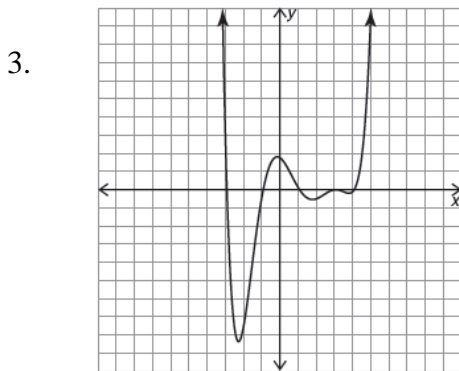
$$f(x) = 2(x-2)(x+3)(x+1)$$



$$f(x) = 4x^6 + 2x^3 - 1$$

$$f(x) = (x+2)(x-5)(x+3) - 2$$

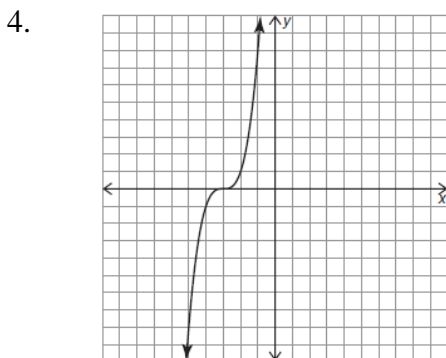
$$f(x) = -0.25(x+2)(x-5)(x+3) + 2$$



$$f(x) = -2x^6 - 13x^5 + 20x$$

$$f(x) = 2x^6 - 13x^5 + 24x^4 - 7x^3 - 28x^2 + 20x$$

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



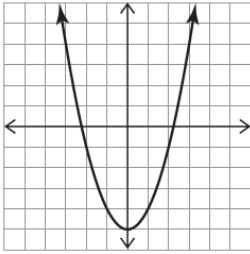
$$f(x) = -x^5 + 2x^2 - x + 3$$

$$f(x) = \frac{1}{2}x(x+3)^3$$

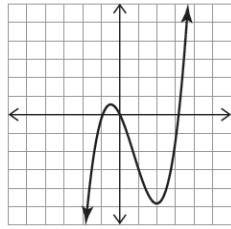
$$f(x) = (x+3)^3$$

Use the graph to determine whether each function is even, odd, or has neither symmetry. If there is symmetry, identify two symmetric points to justify your answer.

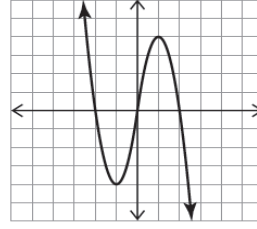
5.



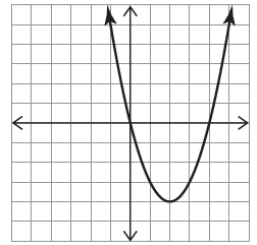
6.



7.



8.



Determine algebraically whether the function is even, odd, or neither by finding and simplifying  $f(-x)$ .

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

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

11.  $f(x) = 5x^3 - 2x$

Use the Leading Coefficient Test to describe the end behavior.

12.  $f(x) = -x^3 + 4x$

13.  $g(x) = 2x^4 - x$

14.  $h(x) = x^5$