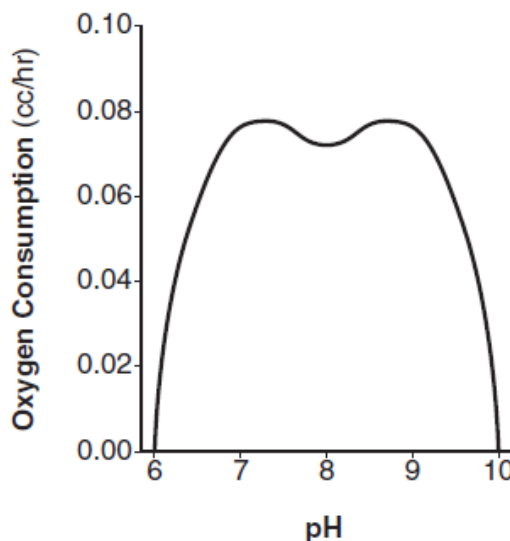


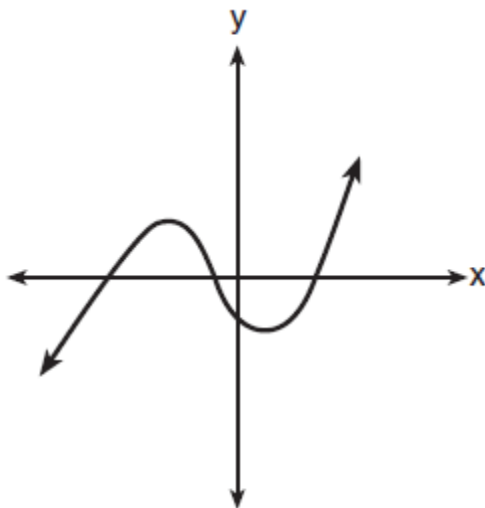
1.) There was a study done on oxygen consumption of snails as a function of pH, and the result was a degree 4 polynomial function whose graph is shown below.

Which statement about this function could be true?

- (a) The degree of the polynomial is odd.
- (b) There is a positive leading coefficient.
- (c) At two pH values, there is a relative minimum value.
- (d) The polynomial has two real zeros and two imaginary zeros.



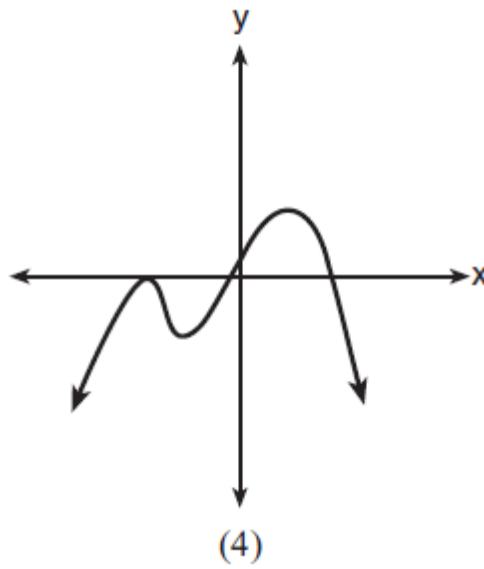
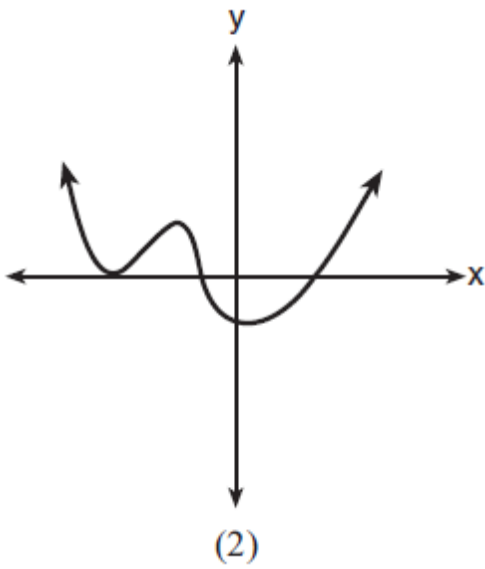
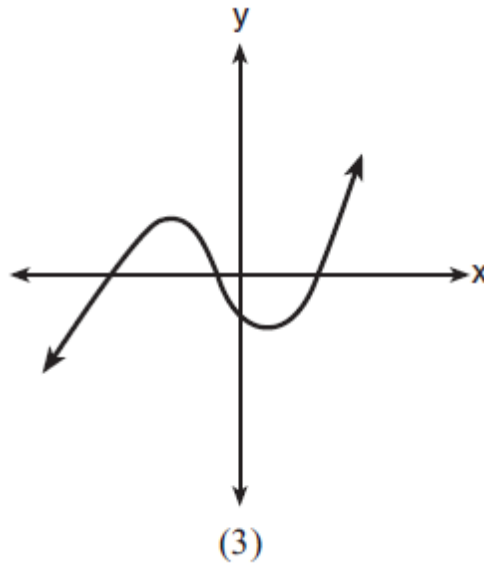
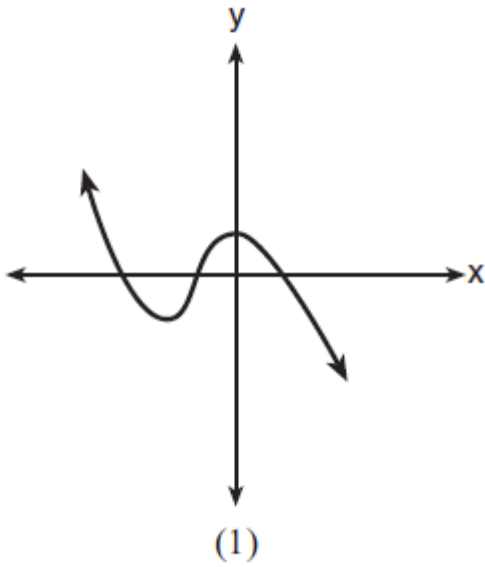
2.) Answer the following questions for the polynomial function whose graph is shown.



- a. The leading coefficient of this graph is \_\_\_\_\_. positive or negative
- b. The degree of this graph is \_\_\_\_\_. odd or even
- c. The graph has \_\_\_\_\_ zero's. 1 or 2 or 3 or 4 or 5

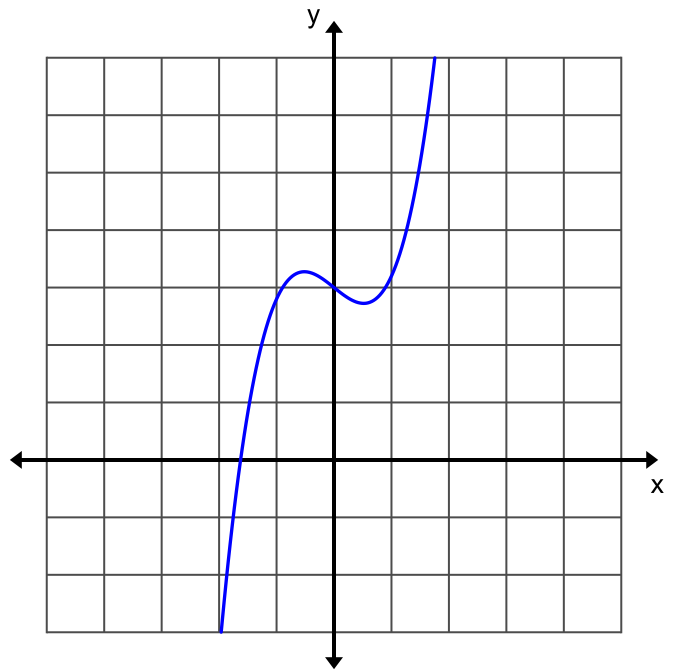
3.) Which graph has the following characteristics?

- Three real zeros
- as  $x \rightarrow -\infty$ ,  $f(x) \rightarrow \infty$
- as  $x \rightarrow \infty$ ,  $f(x) \rightarrow -\infty$



4.) The following graph has

- (a) three real roots
- (b) two real roots and 1 imaginary root
- (c) 1 real root and 2 imaginary roots
- (d) 3 imaginary roots



5.) What are the zeros of  $f(x) = (x^2 + 9)(x^2 - 16)$  ?

- (a)  $3, -3, 4, -4$
- (b)  $-3, 4$
- (c)  $3i, -3i, 4, -4$
- (d)  $3, -3, 4i, -4i$