1.4 Polynomial Functions and Rates of Change

AP Precalculus Name: _____ **CA #2**

Find the leading coefficient and the degree of each polynomial.

1. $f(x) = 3x + 1$

   L.C. _____ Degree: _____

2. $f(x) = -3x^4 - 10x^3 - 4x + 3$

   L.C. _____ Degree: _____

3. $f(x) = -2x^4 + 9x^7 + x^3 + 10x^5$

   L.C. _____ Degree: _____

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

   L.C. _____ Degree: _____

Let $f(x)$ be a polynomial function with the given values. Are there any guaranteed extrema? If so, state where they occur.

5. $f(-1) = 0, f(0) = 10,$ and $f(10) = 0.$

6. $f(-9) = 7, f(0) = 4,$ and $f(5) = 0.$

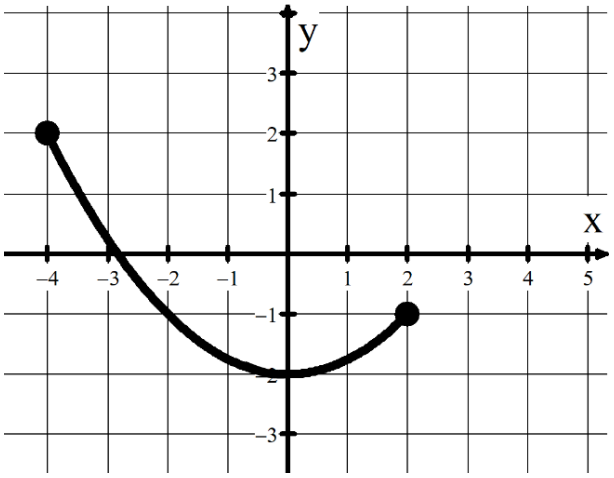
Is there a global maximum or minimum for each function?

7. $f(x) = -5x^8 + 2x^4 - 25$

8. $f(x) = 14x^2 + 1$

9. $f(x) = -2x^{11} - 5x^6 + x^2$

Find the following extrema. If there are none, cross it off and write NONE.

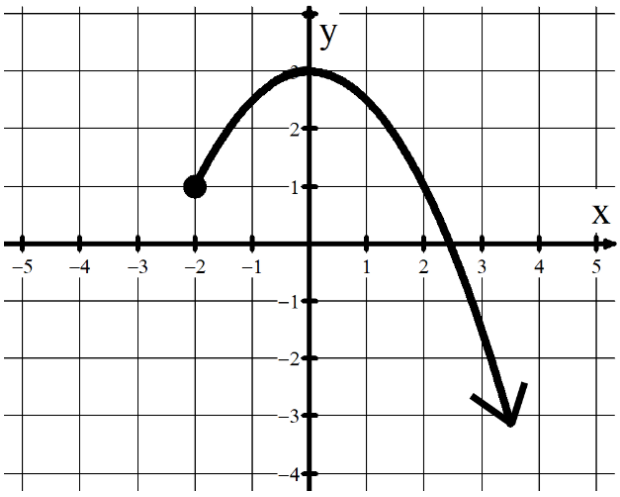


10. Absolute **min** of _____ when $x =$

11. Absolute **max** of _____ when $x =$

12. Relative **min**(s) at $x =$

13. Relative **max**(es) at $x =$



14. Absolute **min** of _____ when $x =$

15. Absolute **max** of _____ when $x =$

16. Relative **min**(s) at $x =$

17. Relative **max**(es) at $x =$

Answers to 1.4 CA #2

1a. 3 1b. 1	2a. -3 2b. 4	3a. 9 3b. 7	4a. -2 4b. 3	5. Yes, on $-1 < x < 10$.
6. No guarantee.	7. max	8. min	9. none	10. min of -2 when $x = 0$
11. max of 2 when $x = -4$	12. 0	13. $-4,\ 2$	14. none	
15. max of 3 when $x = 0$	16. -2	17. 0		