

7-3 Finding Critical Points

Name: _____

Time Start: _____ Finish: _____ Total Time = _____

For 1-4, find the critical points of each function and list them as ordered pairs. Don't worry what type of critical point they may be.

_____ **1.** $f(x) = x^3 + 3x^2 + 2$

_____ **2.** $f(x) = x^3 + 6x^2 + 1$

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

_____ **4.** $f(x) = x^3 + 9x^2 - 8$

_____ **5.** Find the critical points of $f(x) = 3x^3 - 18x^2 - 4$.
Determine whether each point represents a maximum, minimum, or point of inflection.

_____ **6.** Find the critical points of $f(x) = x^3 - 3x^2 + 4$
Determine whether each point represents a maximum, minimum, or point of inflection.

SAT Questions

- _____ 7. A class has twice as many boys as girls. The students in the class stand in one line, with a girl at the front of the line. Which of the following must be true?
- A. The last person in line is a girl.
 - B. The last person in line is a boy.
 - C. There are more girls than boys in the class.
 - D. There are at least two girls standing next to each other.
 - E. There are at least two boys standing next to each other.

- _____ 8. If $\frac{p}{9}$ and $\frac{p}{27}$ are both integers, then what is the least possible positive value of p ?
- A. 3 B. 6 C. 9 D. 18 E. 27

- _____ 9. At 8:00 A.M., the outside temperature was -15°F . At 11:00 A.M. the temperature was 0°F . If the temperature continues to rise at the same uniform rate, what will the temperature be at 5:00 P.M. on the same day?