

Math Sheet

Name _____ Score _____ Teacher _____ Date _____

Critical Points

Find every critical coordinate, classify it, and give the maximal open intervals where the polynomial increases and decreases.

1. Find and classify all critical points; give increasing/decreasing intervals.

$$f(x) = x^2 + 4 \cdot x + 3$$

2. Find and classify all critical points; give increasing/decreasing intervals.

$$f(x) = x^3 - 6 \cdot x^2 + 9 \cdot x - 1$$

3. Find and classify all critical points; give increasing/decreasing intervals.

$$f(x) = -x^4 - 8 \cdot x^3 - 18 \cdot x^2 - 8 \cdot x + 12$$

4. Find and classify all critical points; give increasing/decreasing intervals.

$$f(x) = x^2 - 1$$

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Critical Points

Find every critical coordinate, classify it, and give the maximal open intervals where the polynomial increases and decreases.

5. Find and classify all critical points; give increasing/decreasing intervals.

$$f(x) = -2 \cdot x^3 + 4 \cdot x - 2$$

6. Find and classify all critical points; give increasing/decreasing intervals.

$$f(x) = 2 \cdot x^4 - 8 \cdot x^3 + 4 \cdot x^2 + 8 \cdot x - 10$$

7. Find and classify all critical points; give increasing/decreasing intervals.

$$f(x) = x^2 + 4 \cdot x + 7$$

8. Find and classify all critical points; give increasing/decreasing intervals.

$$f(x) = -x^3 + 6 \cdot x^2 - 12 \cdot x + 7$$
