7.4 Polynomials with a Calculator

Essential Question

How do I determine characteristics of polynomial graphs using a calculator?

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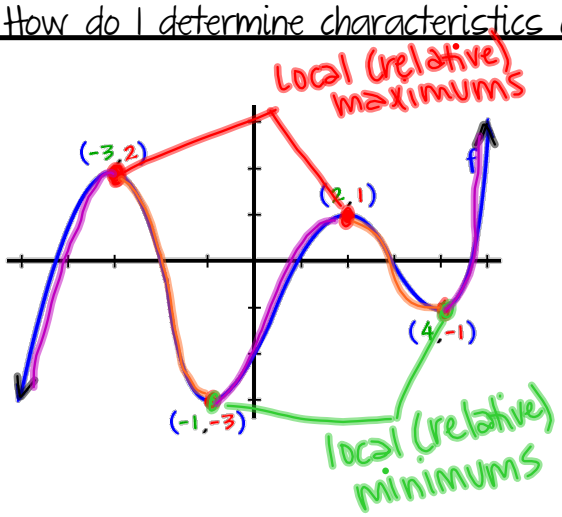

Local Extrema

-highest/lowest pt in an area

Max # → degree − 1

ex $3x^5 - 3x^2 + 2x$

max. of 4 high/lows

increasing: + slope

$(-\infty, -3) \cup (-1, 2) \cup (4, \infty)$

decreasing: − slope

$(-3, -1) \cup (2, 4)$

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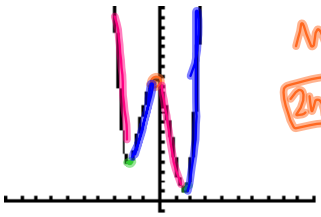
How do I determine characteristics of polynomial graphs using a calculator?

ex. $y = x^4 + x^3 - 6x^2 - 4x + 12$



mins/maxs

2nd TRACE

max: (-.319, 12.643)

min: (1.569, .876)

(-2, 4)

inc: (-2, -.319) ∪ (1.569, ∞)

dec: (-∞, -2) ∪ (-.319, 1.569)

ex. $y = -x^2 + 3x - 2$

(1, 0) (2, 0)

zeroes

- 2nd TRACE 2: zero
- Y2 = 0

2nd TRACE 5: intersect