Watch. Practice. Understand. | Lesson 177

Pre-Calculus Applying Descartes' Rule

Watch the matching video: https://www.youtube.com/watch?v=C940W_1WaFg

Practice focus: Descartes' rule and rational-root candidates

Original extra practice matched to the listed lesson topic.

Name: _____ Date: _____ Show your reasoning and check units.

01 For $f(x) = x^3 - 2x^2 - x + 2$, list possible positive zero counts.

02 For the same f, list possible negative zero counts.

03 List rational-root candidates for $2x^3 - 3x^2 + x - 6$.

04 Explain why a possible count from Descartes' rule is not a complete solution.

Worked answers | Lesson 177

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Practice focus: Descartes' rule and rational-root candidates

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01 For $f(x) = x^3 - 2x^2 - x + 2$, list possible positive zero counts.

Signs +, -, -, + have two changes. Possible counts: 2 or 0, with multiplicity.

02 For the same f, list possible negative zero counts.

$f(-x) = -x^3 - 2x^2 + x + 2$ has one sign change. Exactly one negative real zero.

03 List rational-root candidates for $2x^3 - 3x^2 + x - 6$.

By p/q, candidates are ±1, ±2, ±3, ±6, ±1/2, ±3/2.

04 Explain why a possible count from Descartes' rule is not a complete solution.

The rule counts sign changes to restrict the number of real zeros; it does not locate them or select between counts differing by 2.