MATH 110 Lecture 3.5

Summary of Curve Sketching

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Department of Indigenous Knowledge and Science
First Nations University of Canada

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Sketch $y = \frac{2x^2}{x^2-1}, y = \frac{2}{1-1/x^2}, y' = \frac{-4x}{(x^2-1)^2}, y'' = \frac{12x^2+4}{(x^2-1)^3}$

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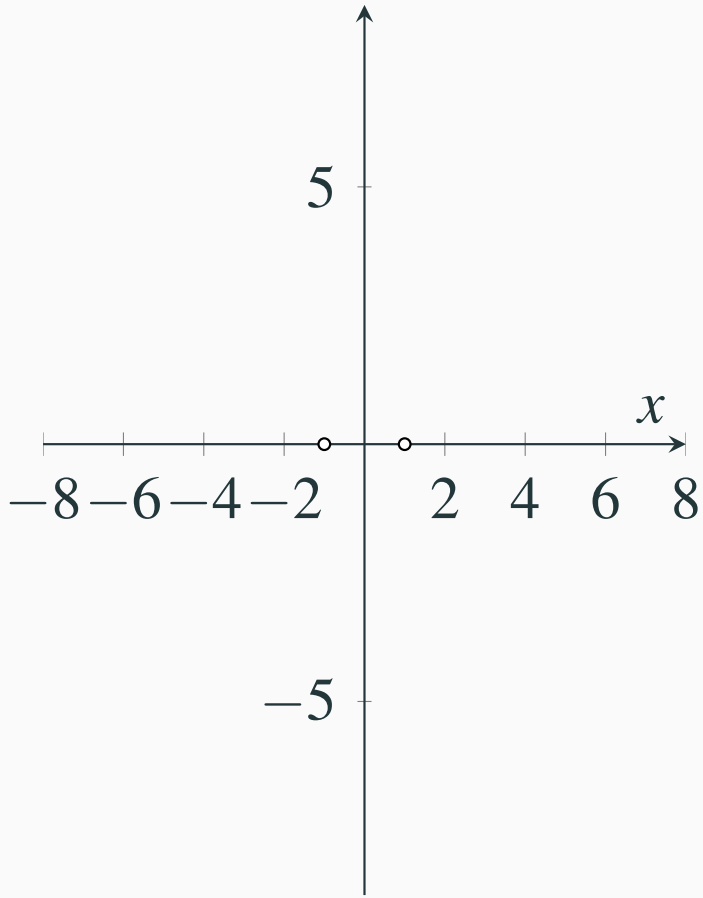

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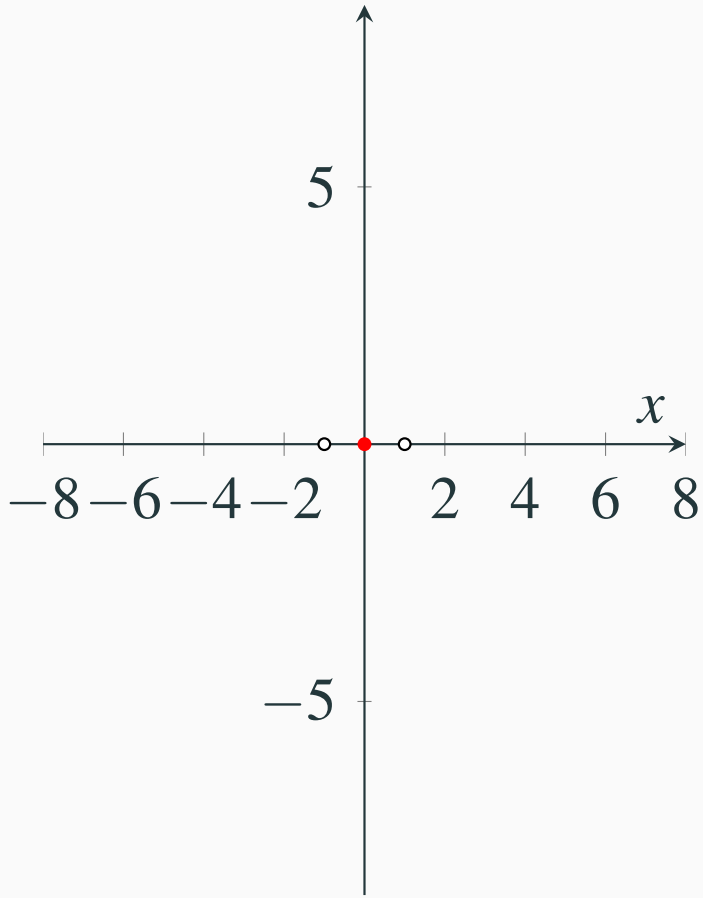

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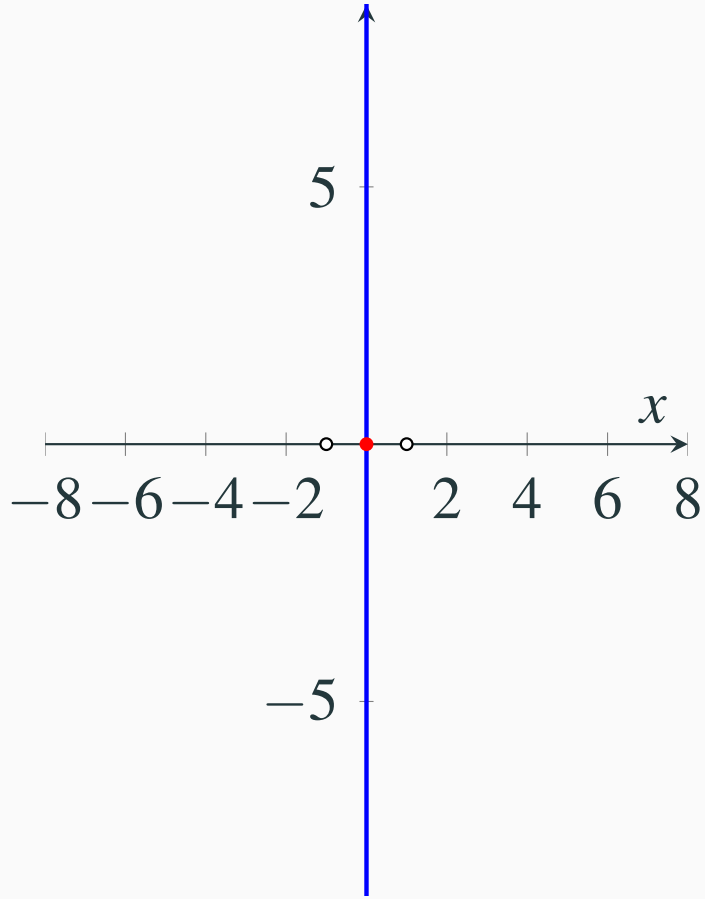

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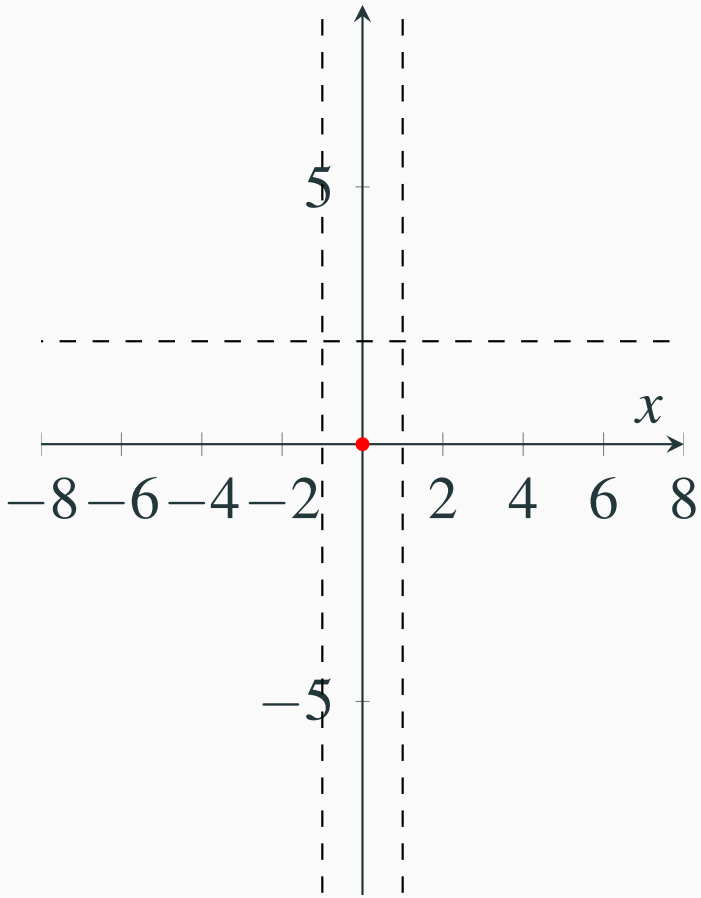

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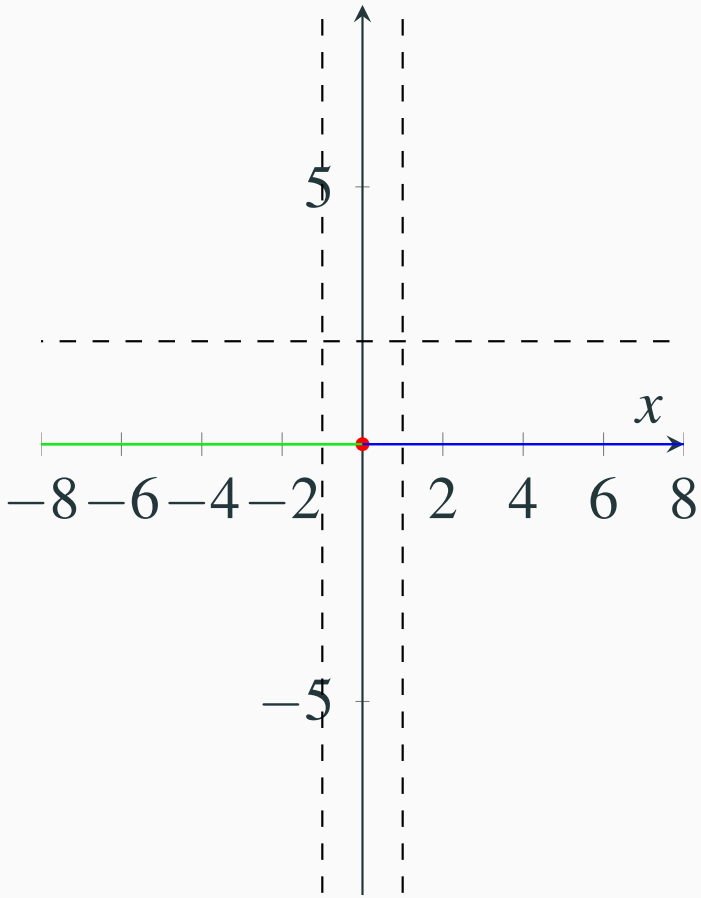

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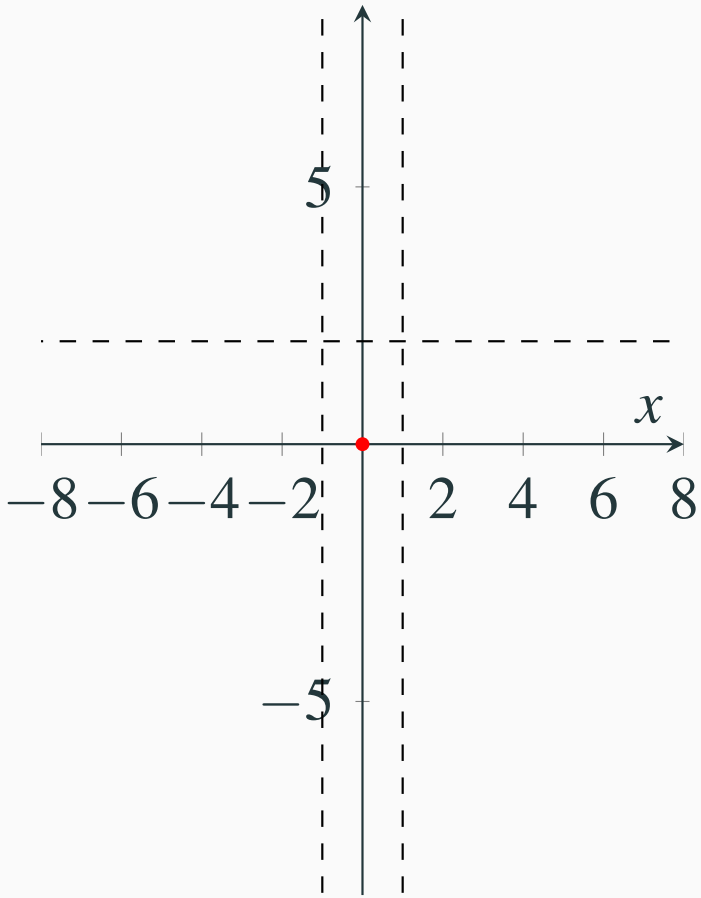

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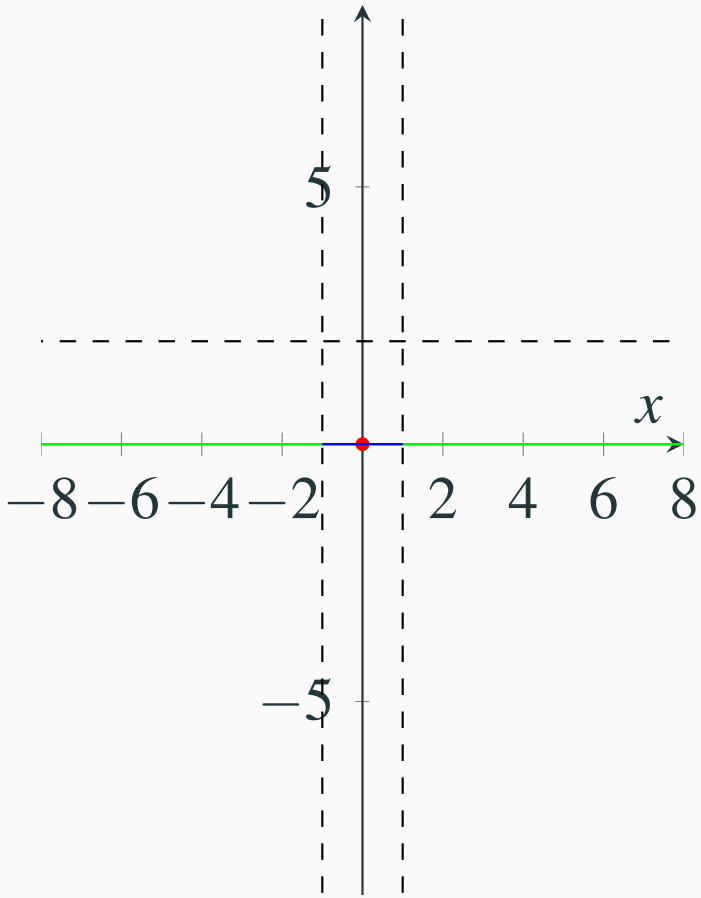

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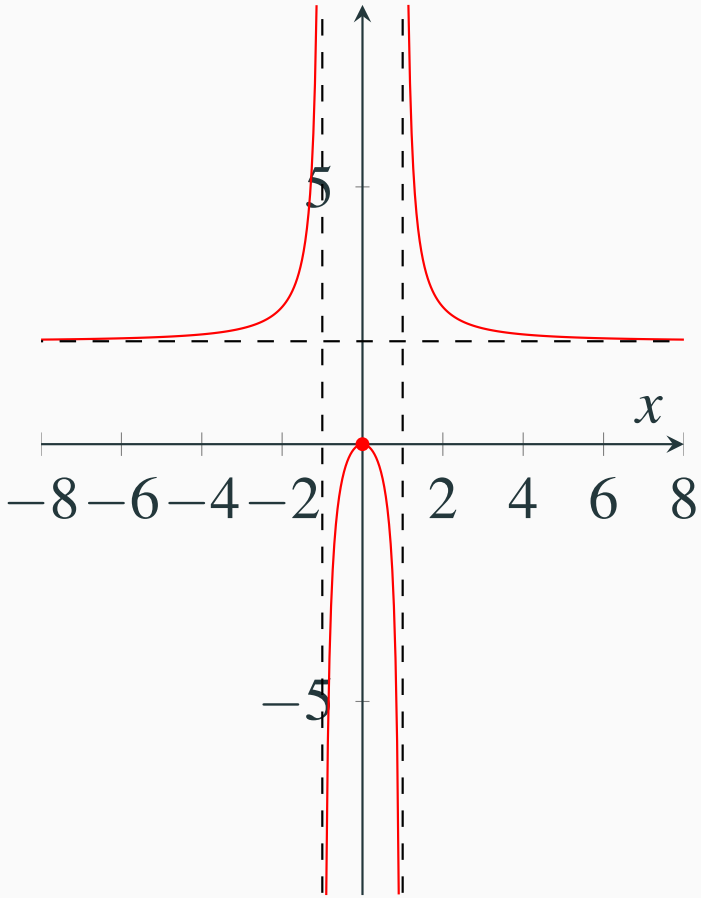

Sketch $f(x) = \frac{x^2}{\sqrt{x+1}}, f'(x) = \frac{x(3x+4)}{2(x+1)^{3/2}}, f''(x) = \frac{3x^2+8x+8}{4(x+1)^{5/2}}$

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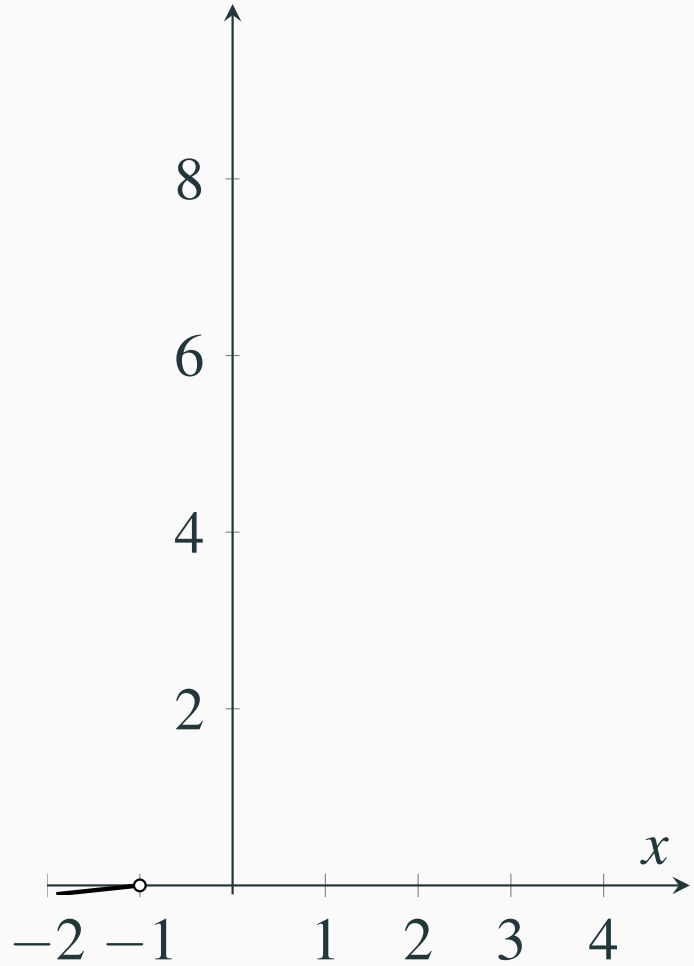

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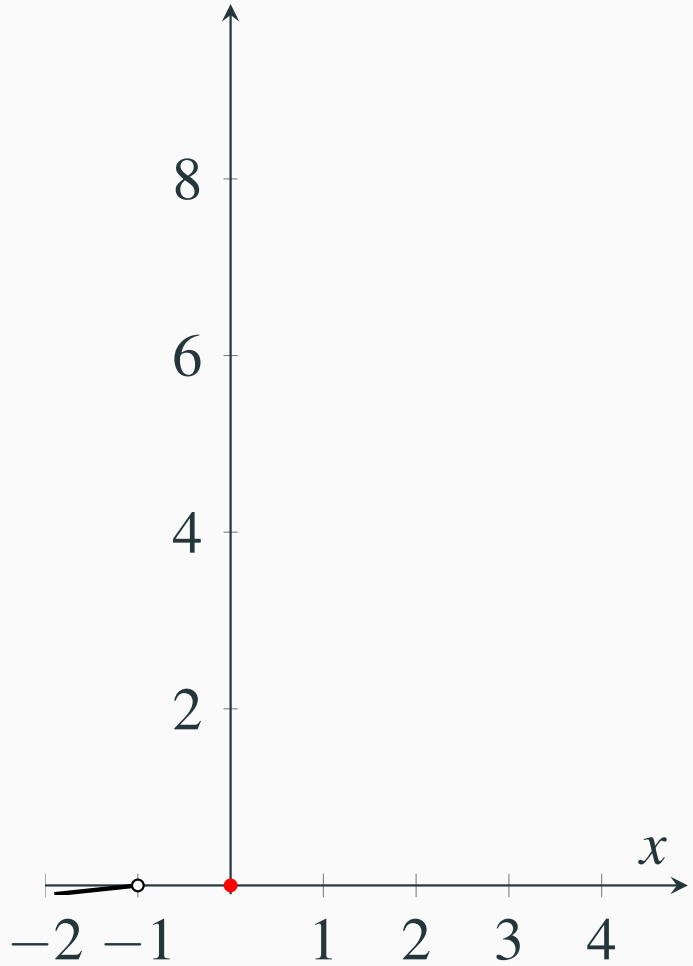

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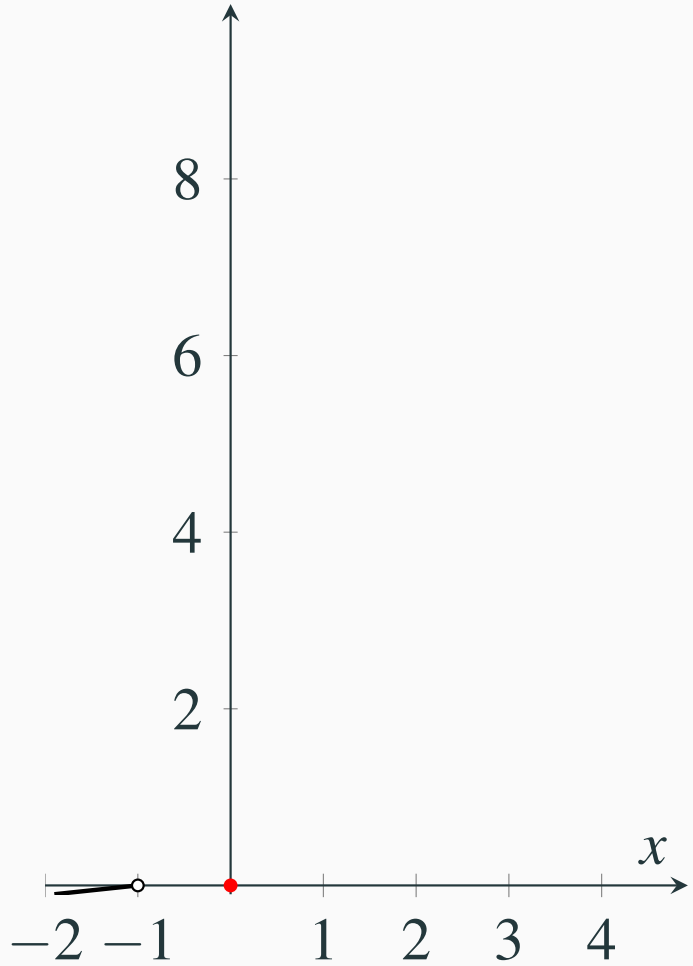

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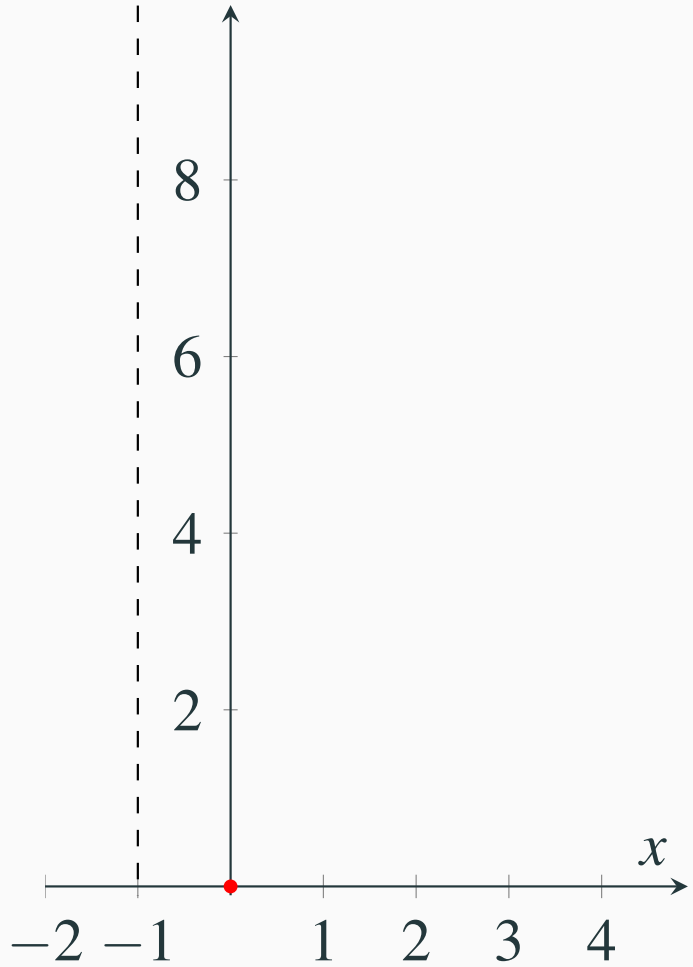

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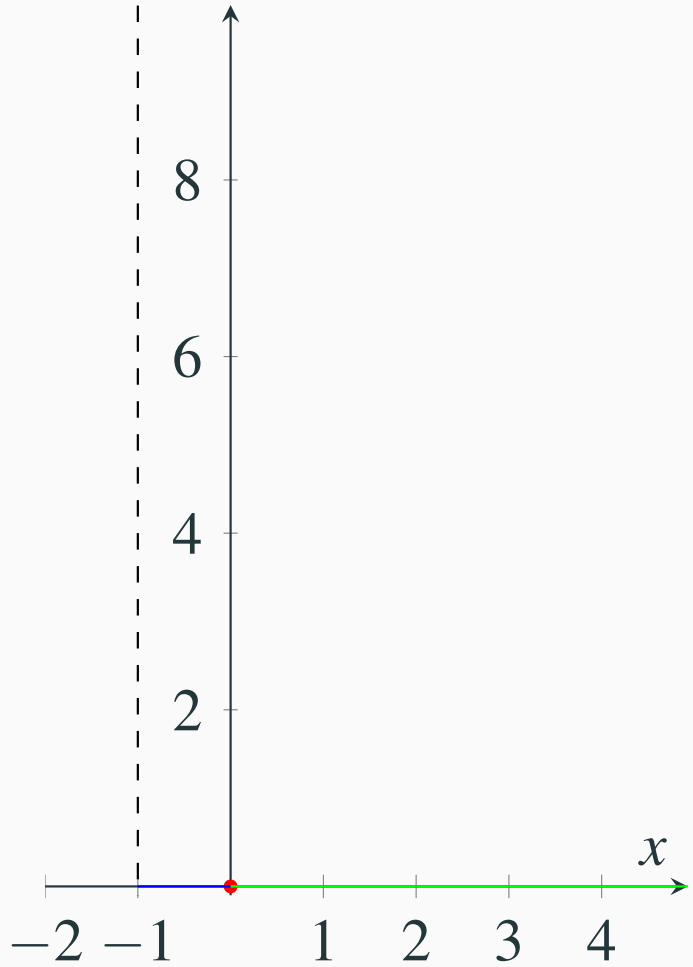

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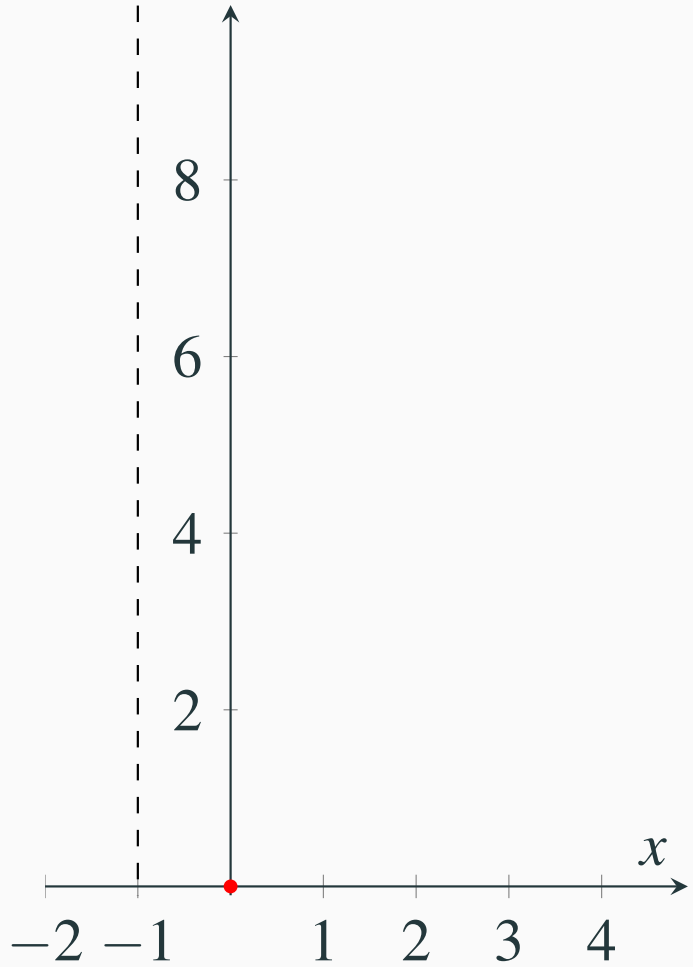

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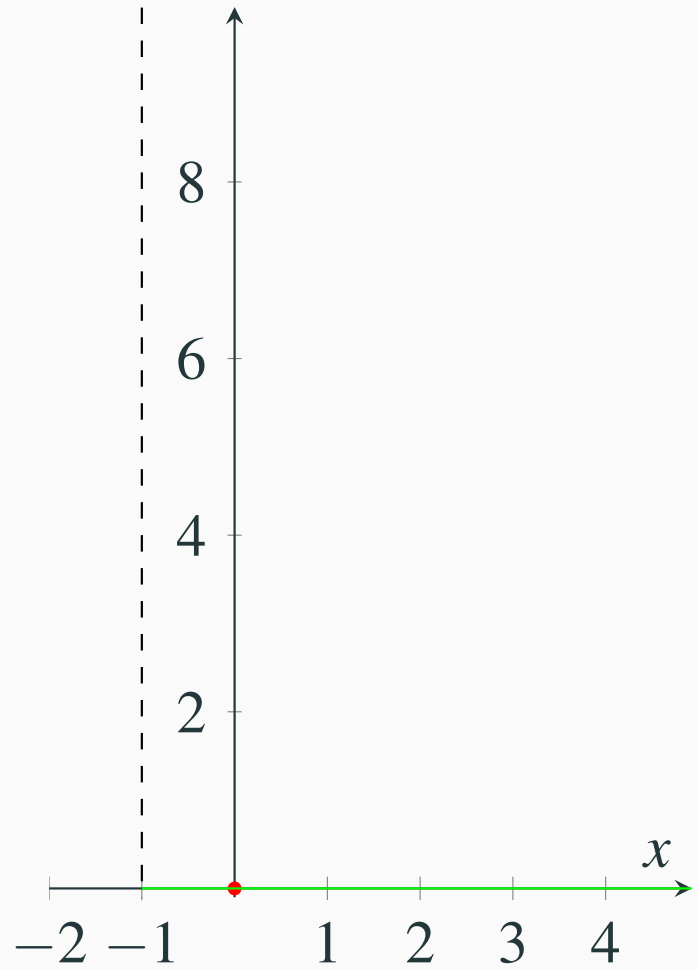

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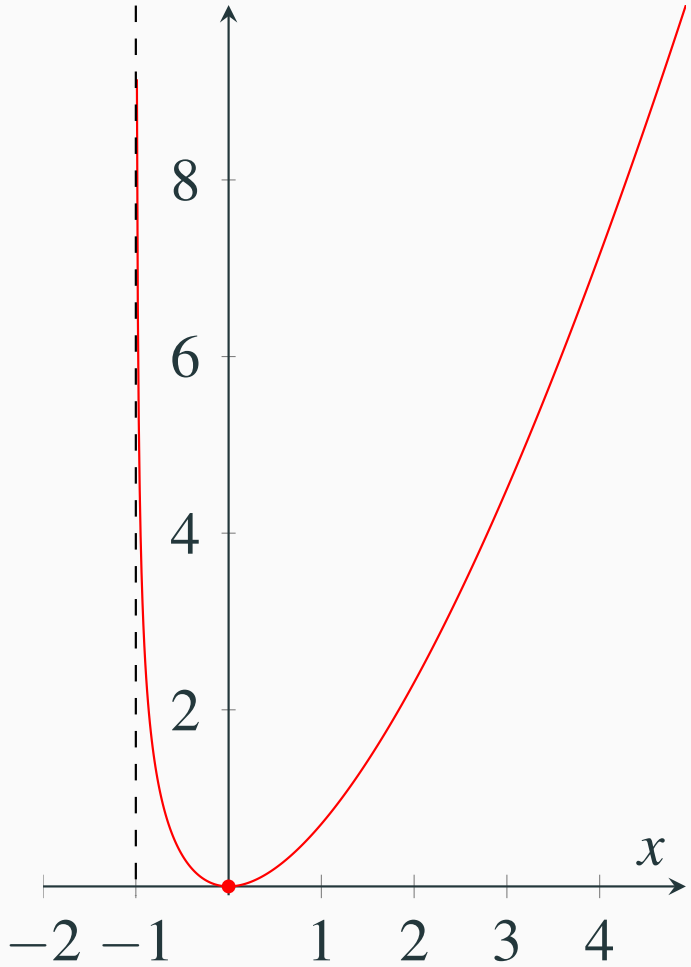

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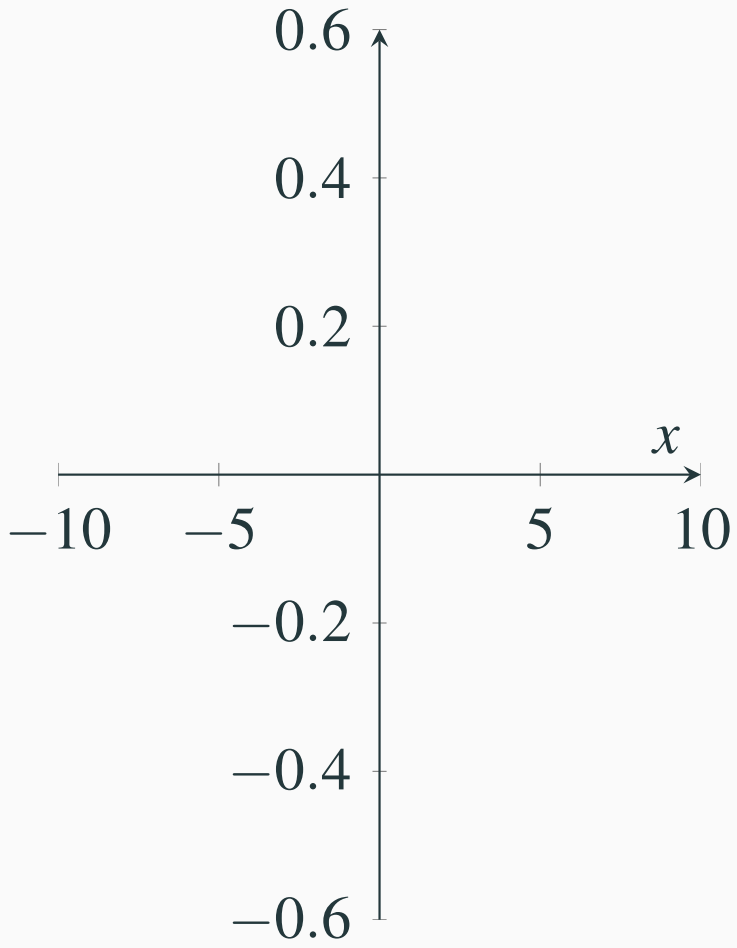

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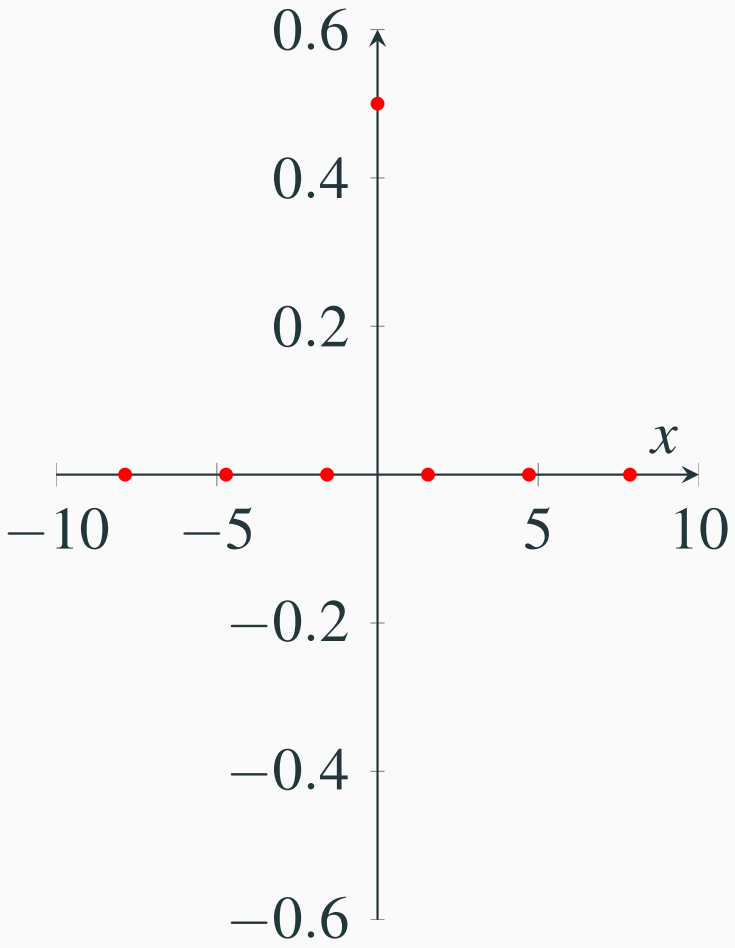

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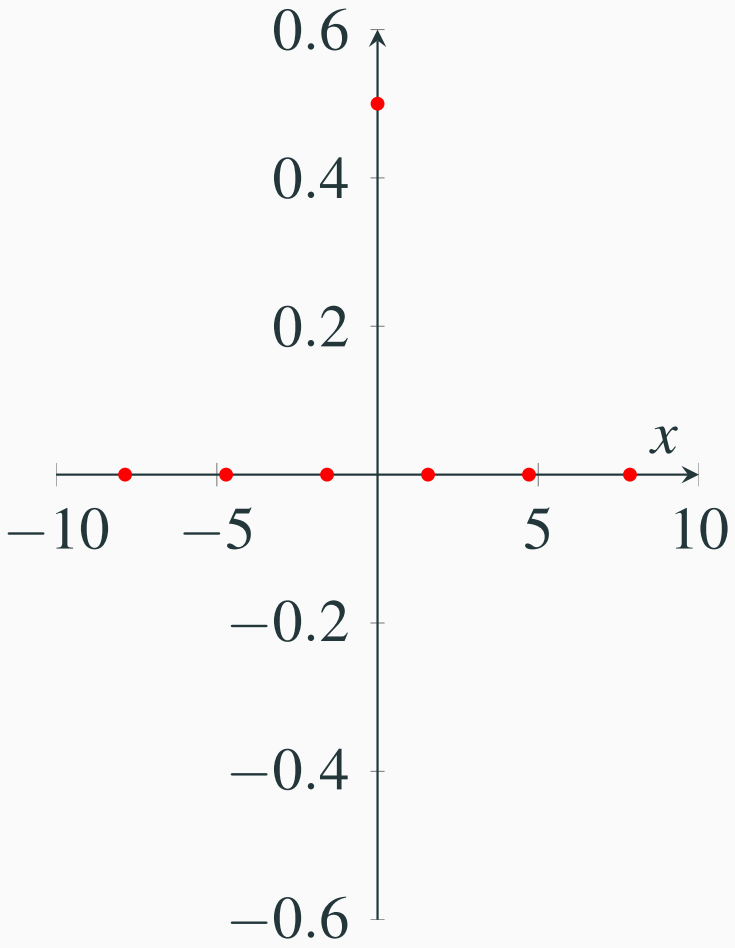

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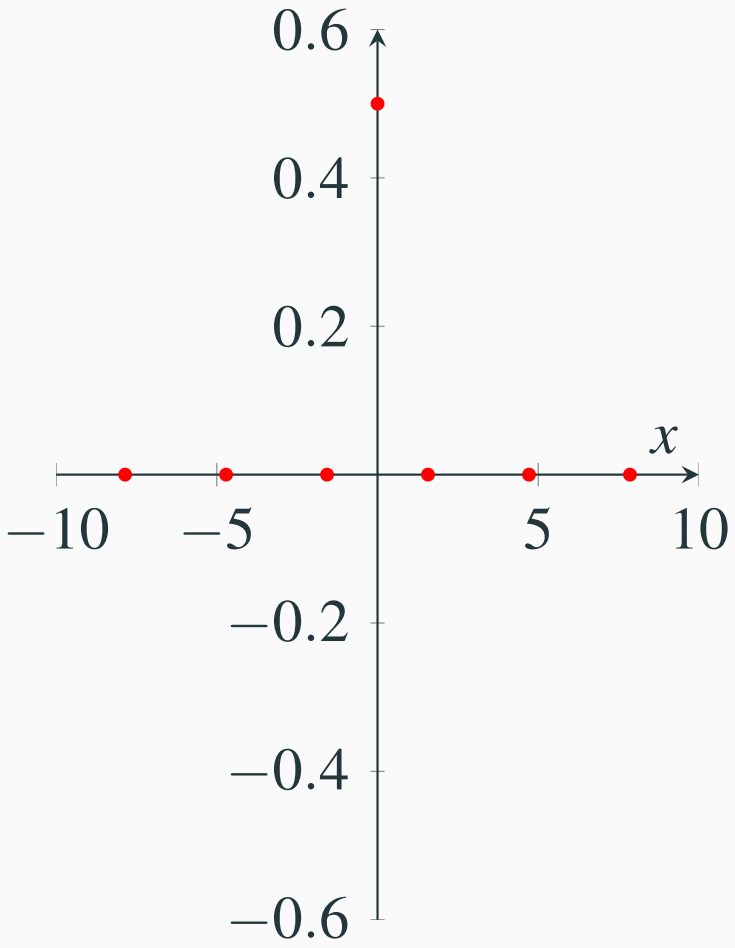

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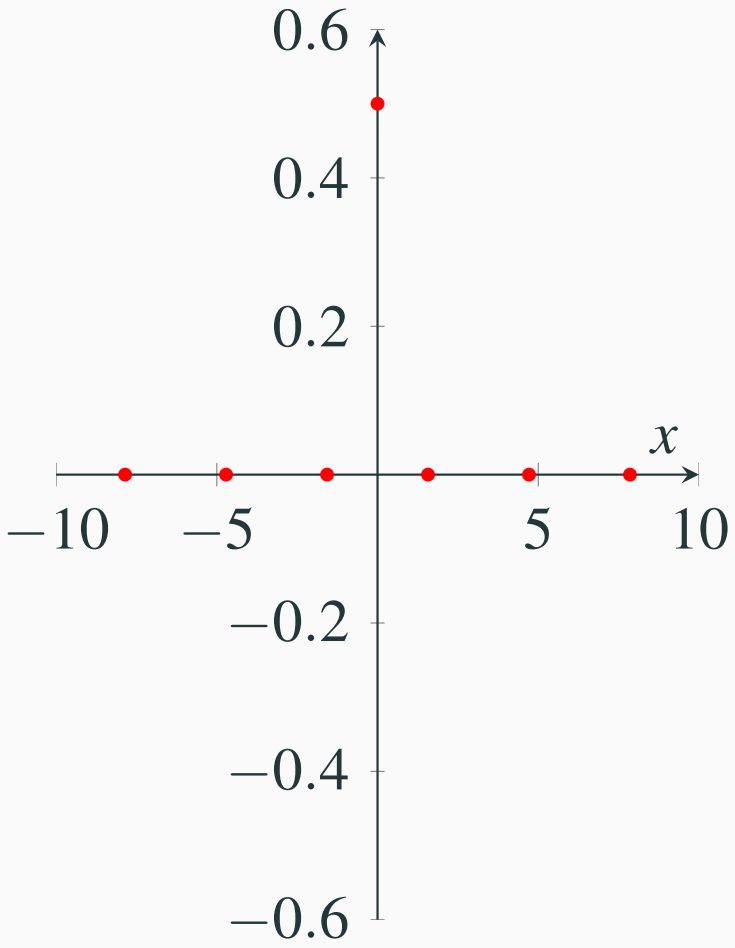

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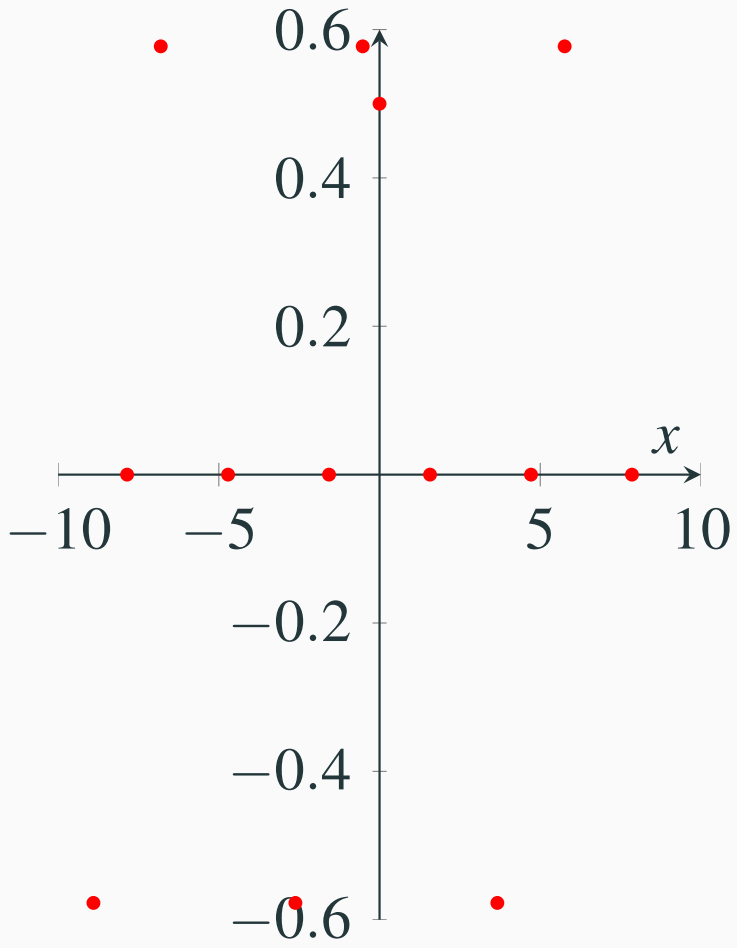

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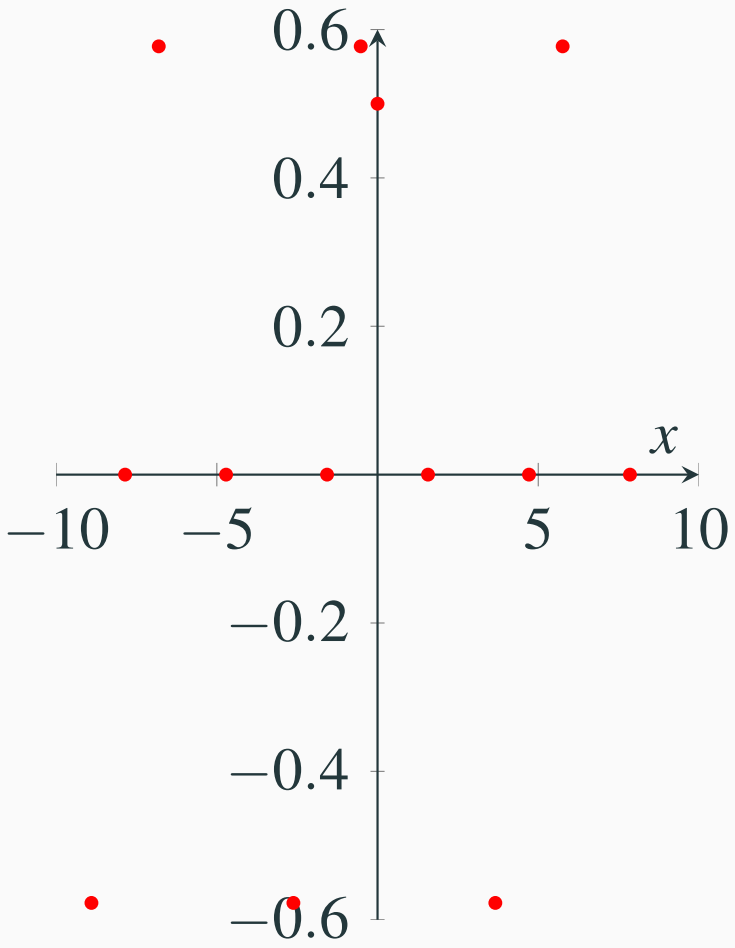

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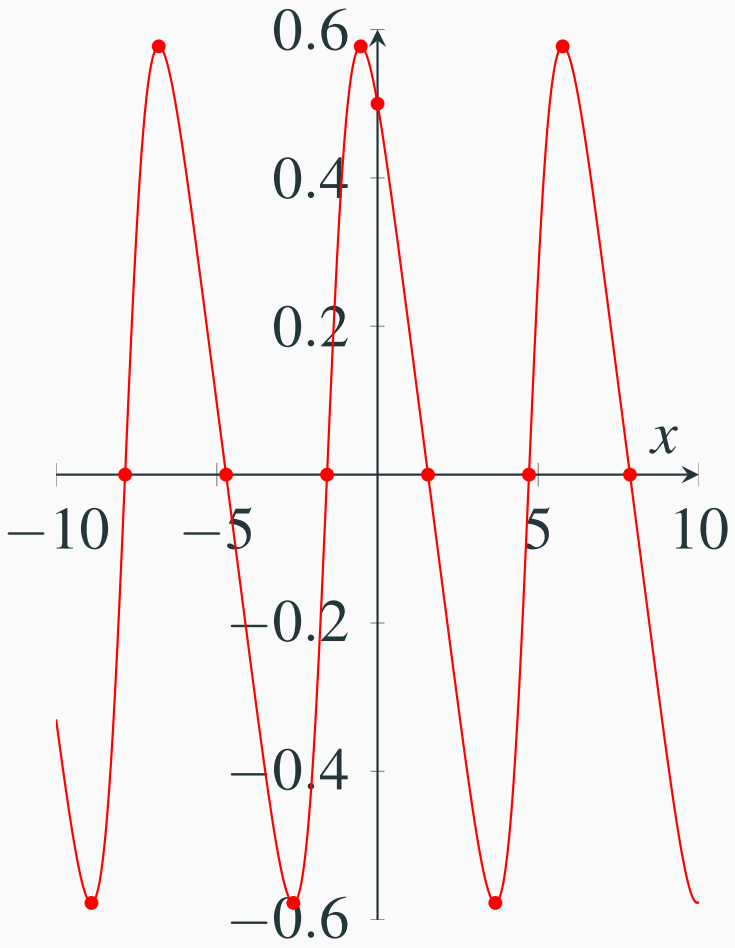

Slant Asymptotes

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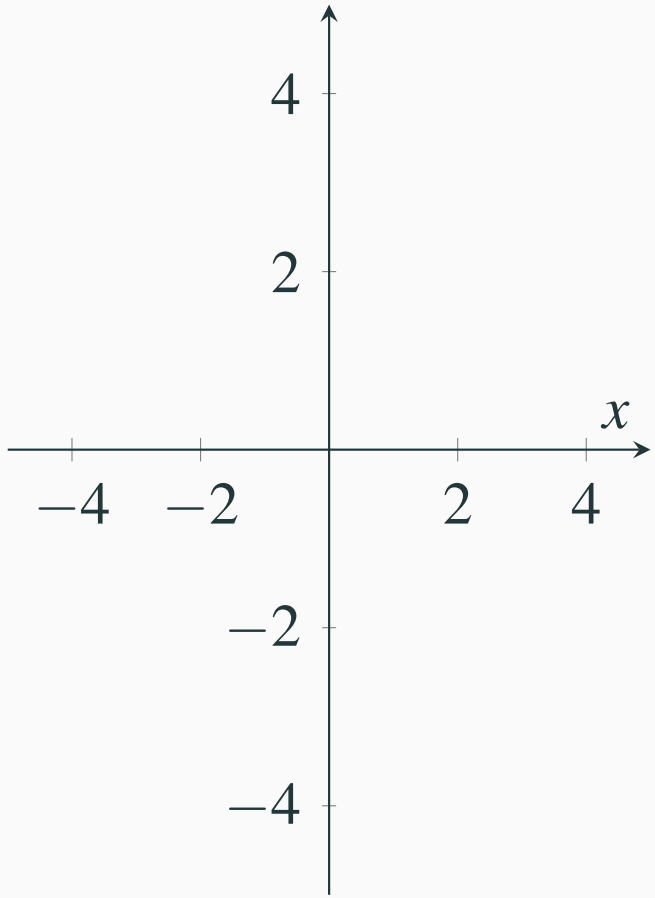

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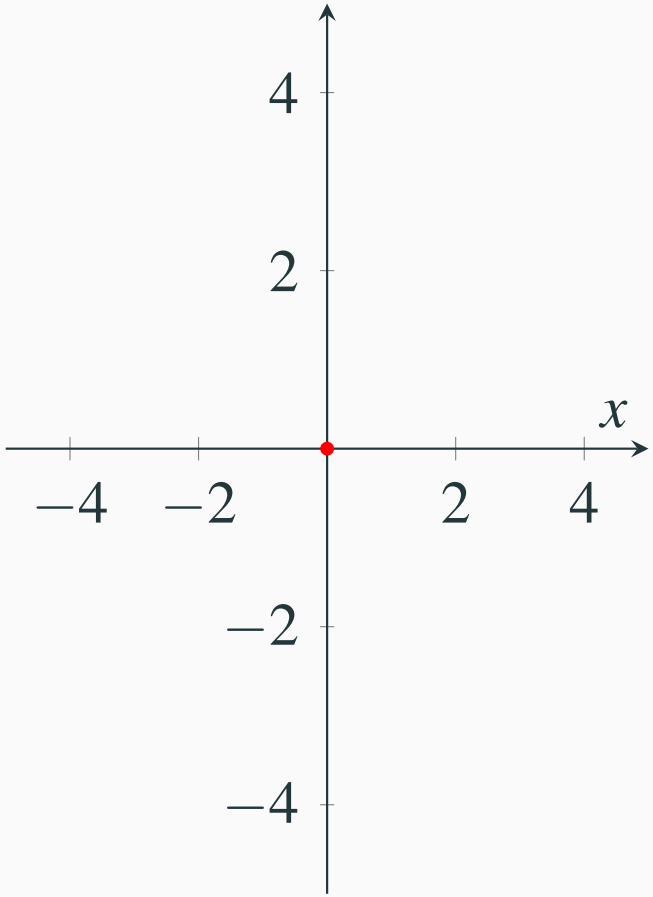

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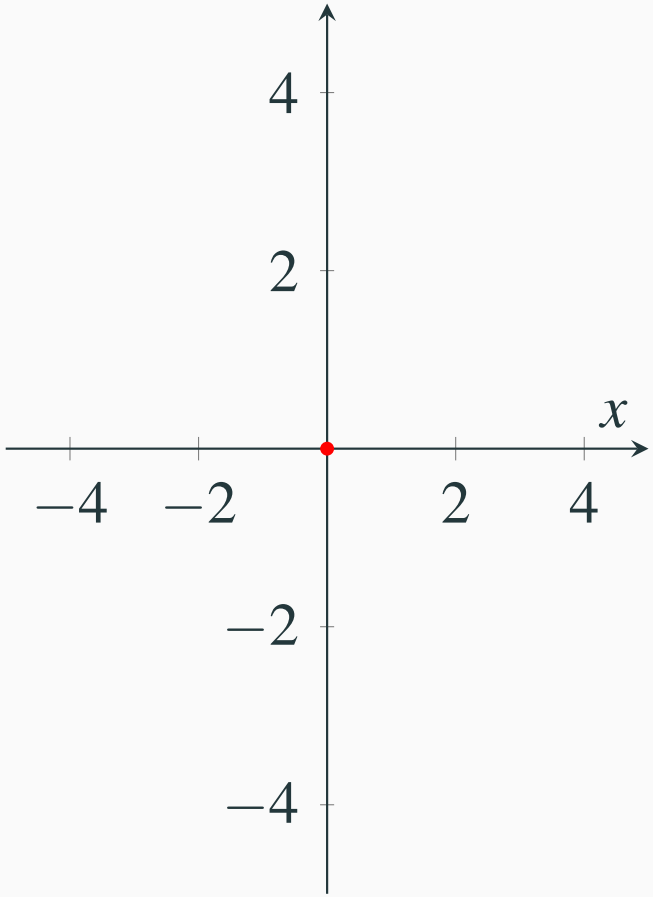

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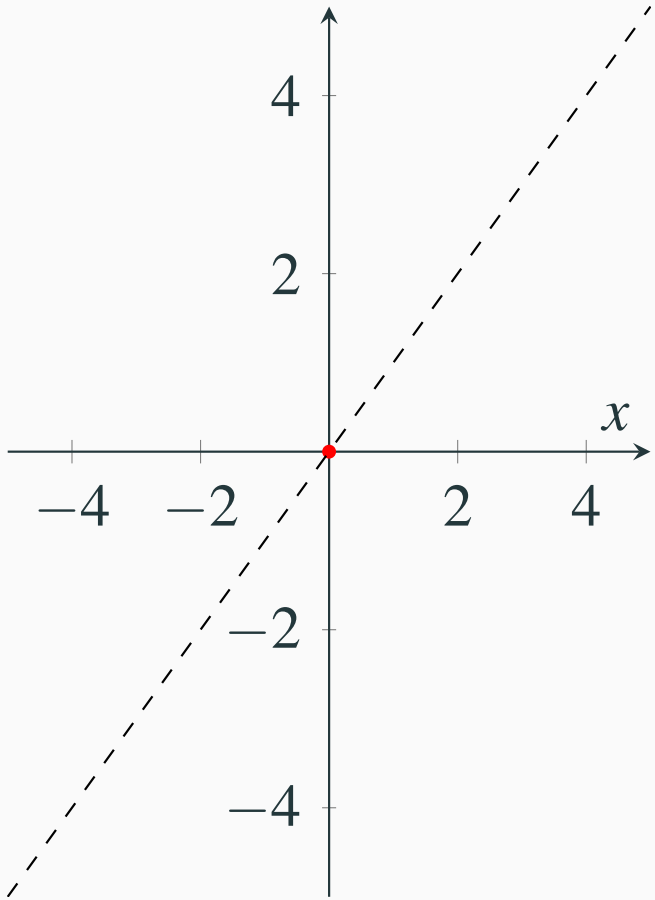

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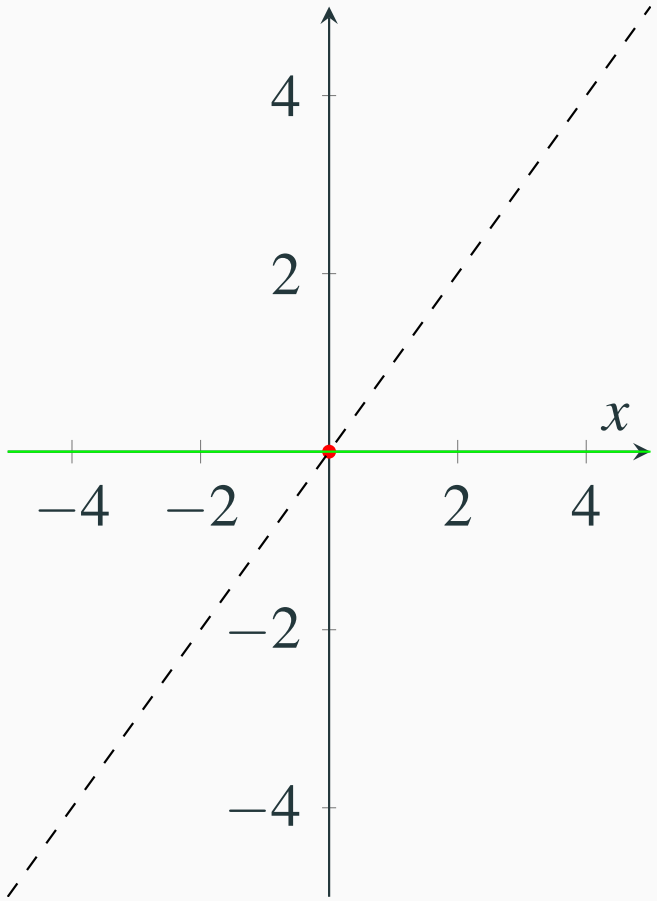

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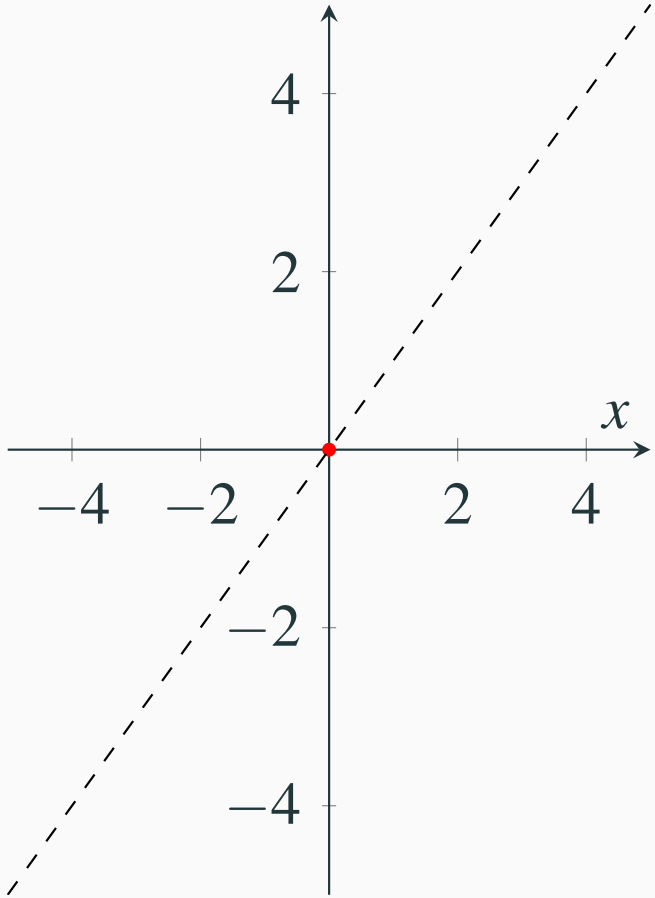

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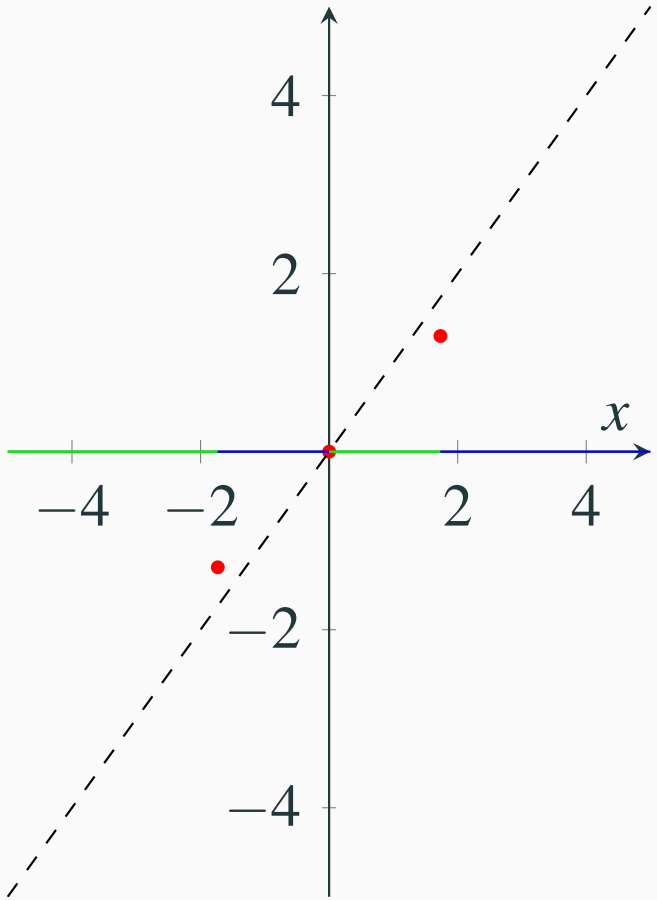

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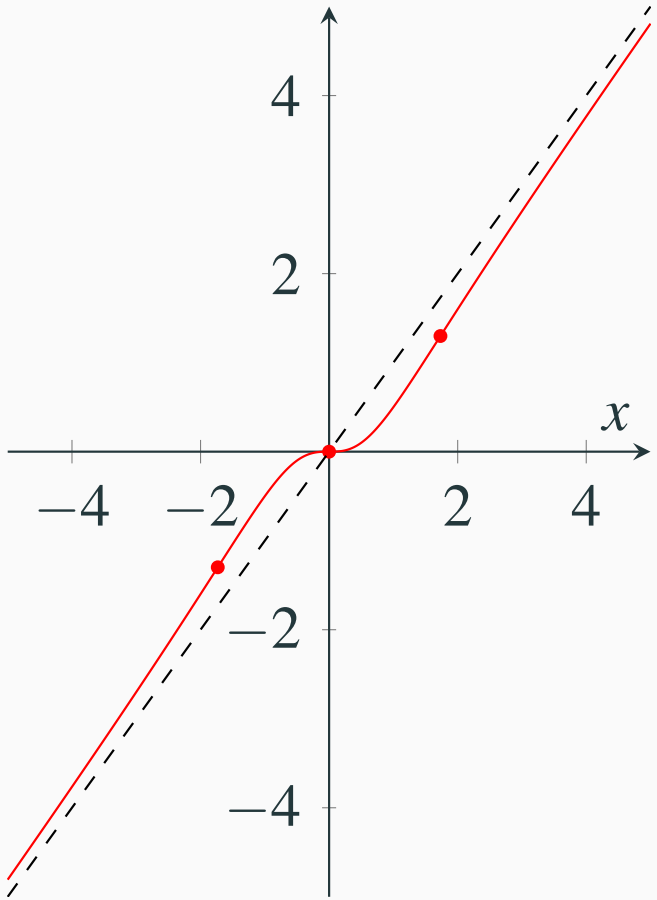

Examples and Exercises

Exercises

Now you should work on Problem Set 3.5. After you have finished it, you should try the following additional exercises from Section 3.5:

3.5 C-level: 1–20, 45–48, 49–54;
B-level: 21–40;
A-level: 41–44, 55–60