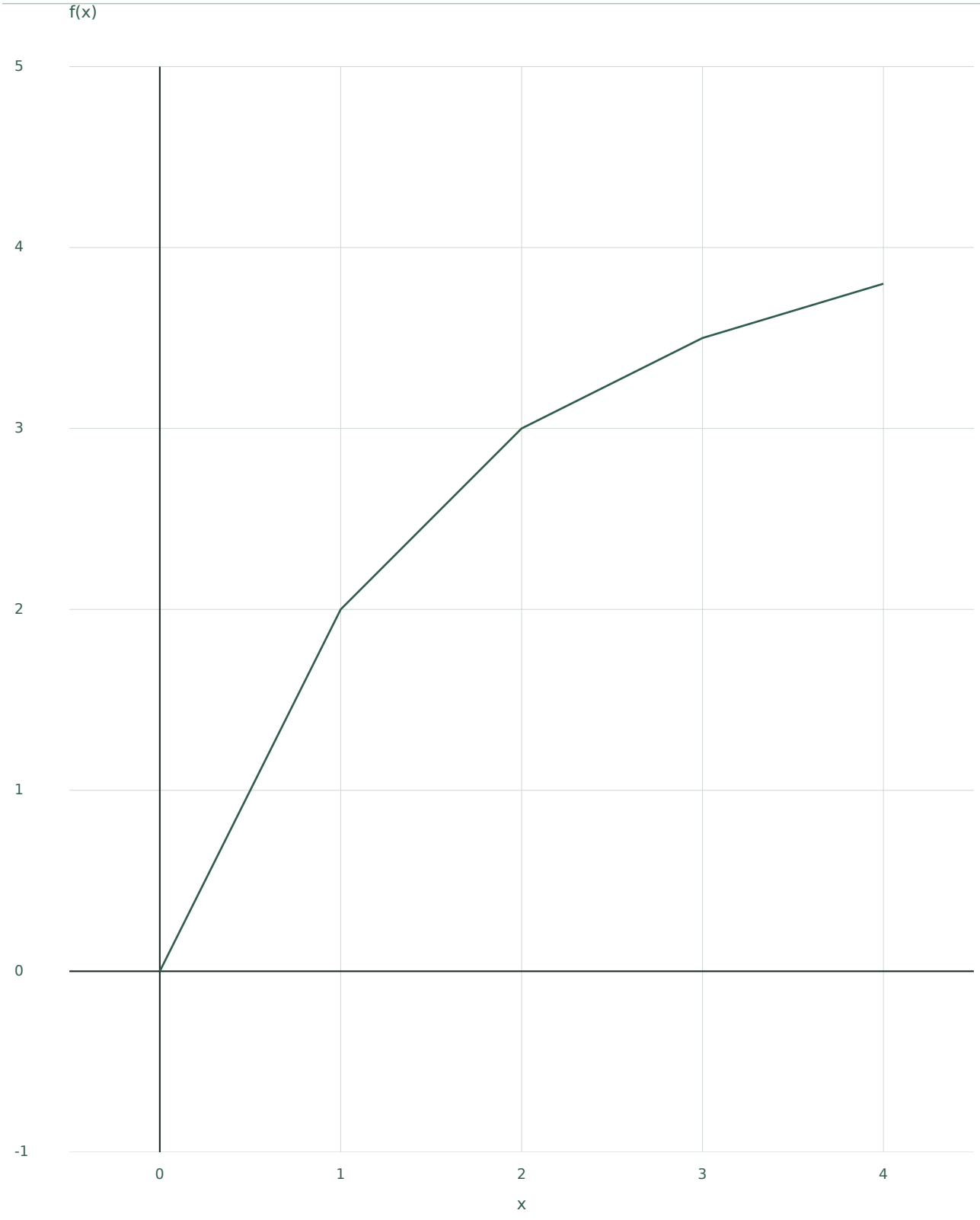
Sketching Derivative Graphs from Function Curves: A Visual Guide

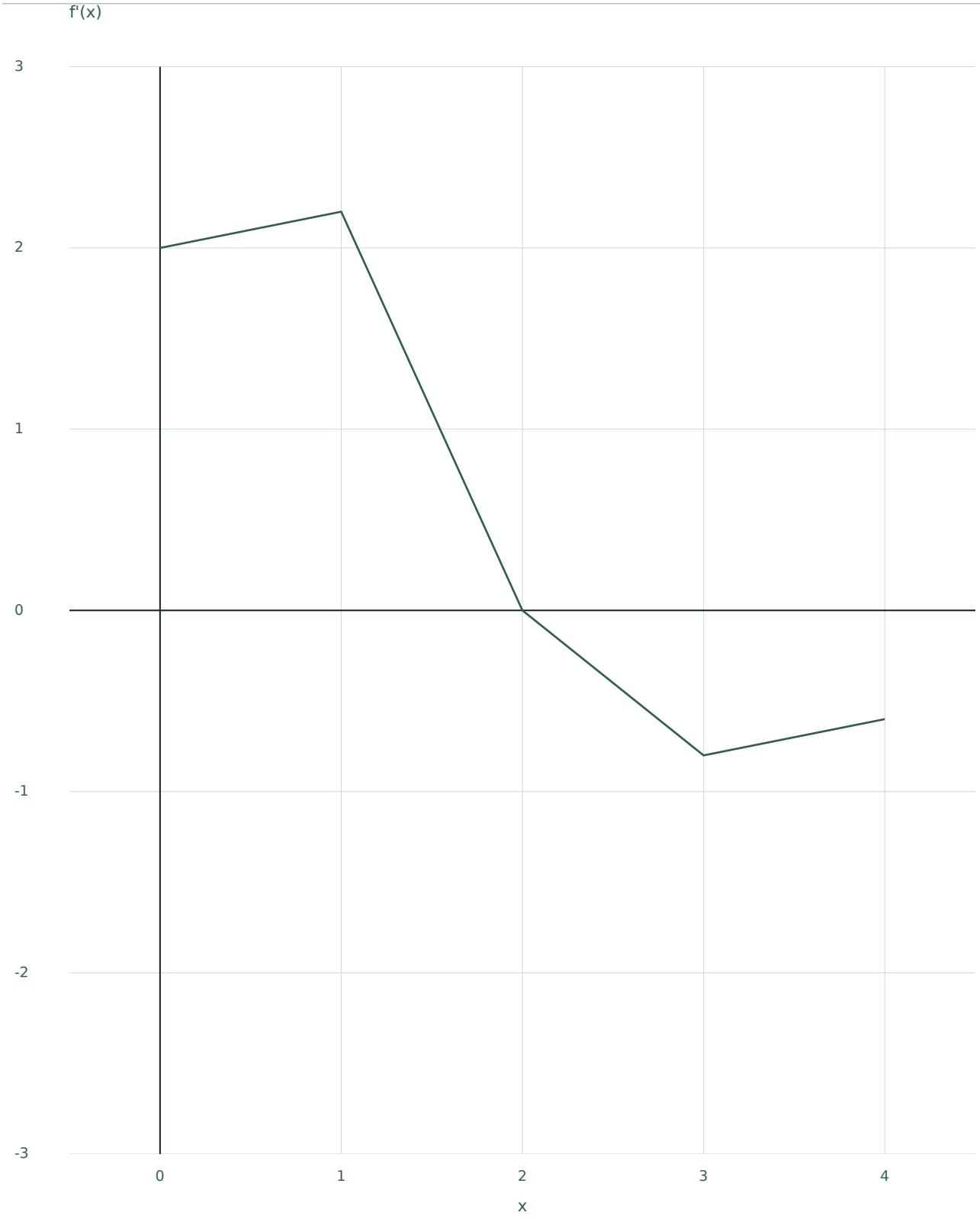
Worked Example: Function Curve



Illustrative smooth curve approximated by polyline; flat top near x=2.

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Worked Example: Derivative Sketch



Vertical scale: one square = one unit of slope (hypothetical example).

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Answer Key: Derivative Sketches

Sample derivative sketches and reasoning; sketches approximate.

Exercise 1: derivative is a horizontal line above the axis at height 2 (hypothetical example). Slope = 4 ÷ 2 = 2.

Exercise 2: derivative is a line through (1,0) with positive slope; about −2 at x=0 and +2 at x=2 (hypothetical example).

Exercise 3: derivative is 1 on (0,1), 3 on (1,2), 0 on (2,3); undefined at x=1 and x=2 (gap or vertical jump).

Exercise 4: derivative crosses axis at x=2 from positive to negative and at x=5 from negative to positive; sign pattern +, −, +.

Rubric: zeros at horizontal tangents; above axis on increasing intervals, below on decreasing; relative steepness preserved with labeled consistent scale; sign changes match maxima/minima; smooth where function smooth; undefined at sharp corners; valid alternative scales accepted if labeled and consistent.