Graphs of Functions and Derivatives Worksheet: Verify Slope-Sign Correspondence

Original tasks 1, 2 / independent work

Task 1

A function graph increases on (-3, 0), decreases on (0, 5), and has a local maximum at x = 0. A proposed derivative graph is positive on (-3, 0), negative on (0, 5), and zero at x = 0. Verify the pair.

Task 2

A function graph decreases on (-1, 2), increases on (2, 6), and has a local minimum at x = 2. A proposed derivative graph is negative on (-1, 2), positive on (2, 6), and zero at x = 2. Verify the pair.

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Original tasks 3, 4 / independent work

Task 3

A function graph increases on (0, 3) and decreases on (3, 7), with a local maximum at x = 3. A proposed derivative graph is negative on (0, 3), positive on (3, 7), and zero at x = 3. Verify the pair.

Task 4

A function graph increases on (-4, -1), has a horizontal tangent at x = -1 without changing direction, and continues increasing on (-1, 2). A proposed derivative graph is positive on (-4, -1), zero at x = -1, and positive on (-1, 2). Verify the pair.