Connecting a curve and its gradient graph

Key knowledge | Free preview

Learning target: Link a graph to its derivative graph, tangent gradient and derivative values, using derivative sign and size to interpret behaviour.

A derivative graph records slopes rather than original heights. Positive derivative means the original graph rises; negative derivative means it falls. Zeros of the derivative are stationary candidates. Reversing the process determines an antiderivative only up to a vertical translation until a boundary value is supplied. Use signs and landmarks before attempting a sketch.

Try the mathematics

Task 1. For $f(x)=x^3-3x$, sketch both f and f'. Explain how the derivative graph identifies the original stationary points and intervals of increase/decrease.

Continue with the full worksheet

The complete resource has 2 focused task sets and substantive worked solutions. Use an exercise book or print the A4 worksheet. This preview shows the first task without its full solution.

Find this resource: https://resources.aspiretopowerlearning.com.au/vce/skills/aspire-mm-u34-o1-kk-10/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Mathematical Methods; Units 3–4; Outcome 1; Key knowledge; bullet 10; p. 102.

The learning target is a concise paraphrase. Aspire reference: aspire-mm-u34-o1-kk-10. This is an internal identifier, not an official VCAA code.

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