Polynomial derivatives and antiderivative families

Key skills | Free preview

Learning target: Find a polynomial's full antiderivative family and use a boundary condition to select one member.

Differentiation reduces each positive integer power by one and multiplies by its original exponent. Antidifferentiation reverses this rule, but a constant is lost when differentiating, so all antiderivatives form a family. A boundary condition selects one member. Check an antiderivative by differentiating it rather than relying only on an integration pattern.

Try the mathematics

Task 1. Differentiate $5x^3-4x^2+7x-6$ by hand. Find its derivative value at $x=2$ and interpret what that value describes on the graph.

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-u2-o1-ks-11/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Mathematical Methods; Unit 2; Outcome 1; Key skills; bullet 11; p. 55.

The learning target is a concise paraphrase. Aspire reference: aspire-mm-u2-o1-ks-11. This is an internal identifier, not an official VCAA code.

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