Recognising and checking antiderivatives

Key skills | Free preview

Learning target: Find antiderivatives of polynomials, rational powers and linear combinations of f(ax+b) for the prescribed power, exponential, sine and cosine families, using patterns or by hand.

When a function has a linear inner expression, an antiderivative usually requires division by the inner slope. Verify every proposed result by differentiating it, which exposes missing constants or signs. An arbitrary additive constant represents the whole family on a connected domain. Negative powers require attention to the exceptional power -1 and any excluded input values.

Try the mathematics

Task 1. Find an antiderivative of $(3x+2)^4$ by recognition and verify it. Explain why $(3x+2)^5/5$ is incorrect.

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-ks-13/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Mathematical Methods; Units 3–4; Outcome 1; Key skills; bullet 13; p. 103.

The learning target is a concise paraphrase. Aspire reference: aspire-mm-u34-o1-ks-13. This is an internal identifier, not an official VCAA code.

Free preview: share intact with attribution, without charging. Full resource rights are not included.

Original independent practice. Not published or endorsed by VCAA. The activity is not an official SAC, examination or complete treatment of every clause of a broad curriculum requirement.