Logarithmic, exponential and circular properties

Key skills | Free preview

Learning target: Simplify expressions and solve equations using algebraic, logarithmic and circular-function properties.

Algebraic identities help simplify expressions and turn an equation into a familiar form. Track domain restrictions throughout: logarithms need positive arguments and cancelled denominators must remain nonzero. For an exponential equation, a positive substitution can reveal a quadratic. A trigonometric simplification is valid only where the original expression is defined.

Try the mathematics

Task 1. For $x>0$, simplify $\ln(x^2/e^3)$. Solve $e^{(2t)}-3e^t+2=0$ by substituting $u=e^t$, and check the admissibility of the quadratic roots.

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-08/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Mathematical Methods; Units 3–4; Outcome 1; Key skills; bullet 8; p. 102.

The learning target is a concise paraphrase. Aspire reference: aspire-mm-u34-o1-ks-08. This is an internal identifier, not an official VCAA code.

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