Exact transformed trigonometric solutions

Key skills | Free preview

Learning target: Solve sin(ax+b)=c, cos(ax+b)=c and tan(ax+b)=c by hand, giving exact solutions in a stated interval.

For a transformed circular equation, solve first for the inner angle and then convert back to the original variable. Translating the original interval into an angle interval makes it easier to list every solution. Keep periodic families visible until the bounds are applied, and substitute candidates back into the original equation to check exact values.

Try the mathematics

Task 1. Solve $\sin(2x-\pi/3)=1/2$ for $0\leq x<2\pi$. Show how the interval limits the periodic solutions.

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-07/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Mathematical Methods; Units 3–4; Outcome 1; Key skills; bullet 7; p. 102.

The learning target is a concise paraphrase. Aspire reference: aspire-mm-u34-o1-ks-07. This is an internal identifier, not an official VCAA code.

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