Transforming circular and exponential graphs

Key knowledge | Free preview

Learning target: Understand transformations of sine, cosine, tangent and exponential graphs.

The same coordinate transformation ideas apply to circular and exponential functions, but their characteristic features differ. Circular parameters control period and amplitude, while exponential transformations alter intercepts, asymptotes and growth direction. Track transformed points, then use the parent function’s range to deduce the new range without estimating it from a small display.

Try the mathematics

Task 1. Describe $y=-3\cos(2x)+4$ as a transformation of $y=\cos x$. State its amplitude, period, range and the image of the point $(0,1)$.

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-kk-04/

Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Mathematical Methods; Unit 2; Outcome 1; Key knowledge; bullet 4; p. 54.

The learning target is a concise paraphrase. Aspire reference: aspire-mm-u2-o1-kk-04. This is an internal identifier, not an official VCAA code.

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