

The Secret of Product to Sum and Sum to Product Identities Pre Calculus Honors 7 3 Part...

Lesson 230 | Precalculus | Product-to-sum and sum-to-product

<https://www.youtube.com/watch?v=-dO7LqHzZEY>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

Convert $2\sin(13x)\cos(11x)$ into a sum, and $2\cos(13x)+2\cos(11x)$ into a product.

02

Convert $2\sin(5x)\cos(3x)$ into a sum, and $2\cos(5x)+2\cos(3x)$ into a product.

03

Convert $12\sin(13x)\cos(14x)$ into a sum, and $12\cos(13x)+12\cos(14x)$ into a product.

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04

Convert $13\sin(6x)\cos(11x)$ into a sum, and $13\cos(6x)+13\cos(11x)$ into a product.

05

Convert $8\sin(13x)\cos(7x)$ into a sum, and $8\cos(13x)+8\cos(7x)$ into a product.

06

Convert $6\sin(2x)\cos(3x)$ into a sum, and $6\cos(2x)+6\cos(3x)$ into a product.

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01

Convert $2\sin(13x)\cos(11x)$ into a sum, and $2\cos(13x)+2\cos(11x)$ into a product.

Product-to-sum: $(2/2)[\sin(24x)+\sin((2)x)]$. Sum-to-product: $4\cos((24)x/2)\cos((2)x/2)$.

02

Convert $2\sin(5x)\cos(3x)$ into a sum, and $2\cos(5x)+2\cos(3x)$ into a product.

Product-to-sum: $(2/2)[\sin(8x)+\sin((2)x)]$. Sum-to-product: $4\cos((8)x/2)\cos((2)x/2)$.

03

Convert $12\sin(13x)\cos(14x)$ into a sum, and $12\cos(13x)+12\cos(14x)$ into a product.

Product-to-sum: $(12/2)[\sin(27x)+\sin((-1)x)]$. Sum-to-product: $24\cos((27)x/2)\cos((-1)x/2)$.

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04

Convert $13\sin(6x)\cos(11x)$ into a sum, and $13\cos(6x)+13\cos(11x)$ into a product.

Product-to-sum: $(13/2)[\sin(17x)+\sin((-5)x)]$. Sum-to-product: $26\cos((17)x/2)\cos((-5)x/2)$.

05

Convert $8\sin(13x)\cos(7x)$ into a sum, and $8\cos(13x)+8\cos(7x)$ into a product.

Product-to-sum: $(8/2)[\sin(20x)+\sin((6)x)]$. Sum-to-product: $16\cos((20)x/2)\cos((6)x/2)$.

06

Convert $6\sin(2x)\cos(3x)$ into a sum, and $6\cos(2x)+6\cos(3x)$ into a product.

Product-to-sum: $(6/2)[\sin(5x)+\sin((-1)x)]$. Sum-to-product: $12\cos((5)x/2)\cos((-1)x/2)$.