

Pre Calculus 7 3 Part III Product to Sum

Lesson 188 | Precalculus | Product-to-sum and sum-to-product

<https://www.youtube.com/watch?v=SBDtoa8Gycg>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

Convert $13\sin(9x)\cos(7x)$ into a sum, and $13\cos(9x)+13\cos(7x)$ into a product.

02

Convert $3\sin(2x)\cos(4x)$ into a sum, and $3\cos(2x)+3\cos(4x)$ into a product.

03

Convert $11\sin(7x)\cos(8x)$ into a sum, and $11\cos(7x)+11\cos(8x)$ into a product.

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04

Convert $9\sin(8x)\cos(5x)$ into a sum, and $9\cos(8x)+9\cos(5x)$ into a product.

05

Convert $5\sin(12x)\cos(14x)$ into a sum, and $5\cos(12x)+5\cos(14x)$ into a product.

06

Convert $12\sin(6x)\cos(2x)$ into a sum, and $12\cos(6x)+12\cos(2x)$ into a product.

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01

Convert $13\sin(9x)\cos(7x)$ into a sum, and $13\cos(9x)+13\cos(7x)$ into a product.

Product-to-sum: $(13/2)[\sin(16x)+\sin((2)x)]$. Sum-to-product: $26\cos((16)x/2)\cos((2)x/2)$.

02

Convert $3\sin(2x)\cos(4x)$ into a sum, and $3\cos(2x)+3\cos(4x)$ into a product.

Product-to-sum: $(3/2)[\sin(6x)+\sin((-2)x)]$. Sum-to-product: $6\cos((6)x/2)\cos((-2)x/2)$.

03

Convert $11\sin(7x)\cos(8x)$ into a sum, and $11\cos(7x)+11\cos(8x)$ into a product.

Product-to-sum: $(11/2)[\sin(15x)+\sin((-1)x)]$. Sum-to-product: $22\cos((15)x/2)\cos((-1)x/2)$.

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04

Convert $9\sin(8x)\cos(5x)$ into a sum, and $9\cos(8x)+9\cos(5x)$ into a product.

Product-to-sum: $(9/2)[\sin(13x)+\sin((3)x)]$. Sum-to-product: $18\cos((13)x/2)\cos((3)x/2)$.

05

Convert $5\sin(12x)\cos(14x)$ into a sum, and $5\cos(12x)+5\cos(14x)$ into a product.

Product-to-sum: $(5/2)[\sin(26x)+\sin((-2)x)]$. Sum-to-product: $10\cos((26)x/2)\cos((-2)x/2)$.

06

Convert $12\sin(6x)\cos(2x)$ into a sum, and $12\cos(6x)+12\cos(2x)$ into a product.

Product-to-sum: $(12/2)[\sin(8x)+\sin((4)x)]$. Sum-to-product: $24\cos((8)x/2)\cos((4)x/2)$.