ADE DLC Calculus for Everyone
Product Rule Practice---1

What is the Product Rule?

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$$\frac{d}{dx}\left[f(x)g(x)\right] =$$
$$f(x)g'(x)+g(x)f'(x)$$

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Product Rule Practice---2

Say the Product Rule in your own words...

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Product Rule Practice---2

"The first times the derivative of the second, plus the second times the derivative of the first."

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Product Rule Practice--3

What is the derivative of
$y = x\sin x$ **?**

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Product Rule Practice---3

$$y = x\cdot\cos x+\sin x\cdot 1,$$
$$= x\cos x+\sin x$$

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Product Rule Practice---4

What is the derivative of
$y = x^2\cos x$ **?**

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Product Rule Practice---4

$$y = x^2(-\sin x)+\cos x\cdot 2x$$
$$= -x^2\sin x+2x\cos x$$

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Product Rule Practice----5

What is the derivative of
$(5x+3)(x^2-2)$ **?**

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Product Rule Practice----5

$$(5x+3)(2x)+(x^2-2)(5)$$
$$=10x^2+6x+5x^2-10$$
$$=15x^2+6x-10$$