

The Infinite Actuary Exam 1/P Online Seminar
B.0 One Dimensional Calculus Review Lecture Examples

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| B.0.1 One-Dimensional Derivatives |
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Slide 5/42.

$$\frac{d}{dx} x^3$$

$$\frac{d}{dy} 3y^2$$

$$\frac{d}{dt} (5e^t + 3t^4)$$

$$\frac{d}{ds} \frac{2}{s^3}$$

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$$\frac{d}{dx} [x^2 e^{3x}]$$

$$\frac{d}{dx} \frac{e^{-x}}{x^3}$$

$$\frac{d}{dx} [(x^2 + 3x + 5)^3 \cdot e^{4x}]$$

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$$\frac{d}{dx} \frac{2x+5}{x^2-3x+4}$$

$$\frac{d}{dx} (x+2)e^{x^2-5x}$$

$$\frac{d}{dx} x^2 e^{-3x^2}$$

$$\frac{d}{dx} \sin |x+2|$$

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$$\int_{-2}^5 3x^4 dx$$

$$\int_2^{\infty} \frac{3}{x^4} dx$$

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$$\int_2^{\infty} x e^{-2x^2} dx$$

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$$\int_2^5 \frac{3x}{(x+5)^2} dx$$

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$$\int_0^{\pi} (1 + \cos t) dt$$

$$\int_{-2}^5 |x| dx$$

$$\frac{d}{dx} \int_{-2x}^{x^3} e^{5t-5} dt$$

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$$\int x e^x dx$$

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$$\int x \ln x \, dx$$

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$$\int_0^{\infty} 4x^2 e^{-x/3} dx$$

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$$\int_1^{\infty} 4x^2 e^{-x/3} dx$$