

Write the derivatives of these functions legibly on the lines provided. No computers or calculators. Do not simplify your answers.

1.  $\frac{d}{dx}(x^{12} - 6x^{-2} + 12x - 1) =$

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2.  $\frac{d}{dt}(f(p(t))) =$

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3.  $\frac{d}{dt}\left(\frac{2t-5}{t^5+2}\right) =$

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4.  $\frac{d}{dt}(1-3t^2)^6 =$

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5.  $\frac{d}{dx}e^{1+5x} =$

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Math 113 -- Gateway Practice  
Derivatives

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Name

6.  $\frac{d}{dx}(\arctan(x))^3 =$

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7.  $\frac{d}{dx}(\ln(4x^3)) =$

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8.  $\frac{d}{du}(\sin u \cdot 3^u) =$

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9.  $\frac{d}{dt}\left(\frac{\tan(3t)}{t^3}\right) =$

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10.  $\frac{d}{dx}(\sqrt{x^5} - x^{-1/3}) =$

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