MTHSC 102 Section 3.4 – The Chain Rule

Kevin James

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THE CHAIN RULE (1ST FORM)

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$$\frac{\mathrm{dC}}{\mathrm{dt}} = \left(\frac{\mathrm{dC}}{\mathrm{dp}}\right) \left(\frac{\mathrm{dp}}{\mathrm{dt}}\right)$$

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- Describe the meaning and give the value of each of the following in 2008.
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- Describe the meaning and give the value of each of the following in 2008.
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2 Calculate the rate of change with respect to time of the average cost for violins in 2008.

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THE CHAIN RULE (2ND FORM)

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$$\frac{\mathrm{df}}{\mathrm{dx}} = f'(x) = h'(g(x)) \cdot g'(x).$$

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EXAMPLE

Write the derivatives with respect to x of the following functions.

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$$y = e^{x^2}$$

2 $y = (x^3 + 2x^2 + 4)^{\frac{1}{2}}$
3 $y = \frac{3}{4 - 2x^2}$

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