

Business Calculus  
Mett

Math 121  
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NAME: \_\_\_\_\_

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Use short-cuts to find derivatives of the following functions.

1.  $f(x) = (3x^7 - 7x^2 + 93)^5$

ANSWER:  $f'(x) = 5 (3x^7 - 7x^2 + 93)^4 (21x^6 - 14x)$

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2.  $g(x) = x^2\sqrt{3x+5}$

ANSWER:  $g'(x) = 2x\sqrt{3x+5} + \frac{3x^2}{2\sqrt{3x+5}}$

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3.  $h(x) = \frac{7x^2 - 2}{(x^3 - 7)^5}$

ANSWER:  $h'(x) = 14 \frac{x}{(x^3 - 7)^5} - 15 \frac{(7x^2 - 2)x^2}{(x^3 - 7)^6}$