

Business Calculus
Mett

Math 121
February 21, 2003

NAME: _____

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

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

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

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

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

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

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