Quiz Practice Questions 7 for Mathematics 223 Introductory Analysis I - Fall 2001 Material Covered: Sections 4.5.4.6 of workbook and text For: Friday, 29th November

This is a 15 minute quiz, worth 5% and marked out of 5 points. The total possible points awarded for each question is given in square brackets at the beginning of each question. Anything that can fit on one side of an $8\frac{1}{2}$ by 11 inch piece of paper may be used as a reference during this quiz. A calculator may also be used. No other aids are permitted.

| Name (please print): | | | . ID Number: | |
|---|----------------|----------------|--|--|
| | last | first | | |
| | | | | |
| 1. [1 point] | | | | |
| Express 8^{kt} as a power of | e | | <u> . . </u> | |
| 2. [1 point] Let $f(x) = \log x$ | $g_4 x.$ | | | |
| Then $f'(x) =$ | | | | |
| 3. [2 points] Let $f(x) = x$ | x. | | | |
| Then $f'(x) =$ | | | | |
| 4. [1 point] Determine th | e elasticity o | f D(p) = 200 - | 3p at p = 65. | |

- (1) $e^{kt\ln 8}$
- (2) $\frac{1}{x \ln 4}$
- (3) $x^{x}(\ln x + 1)$

$$\ln y = \ln x^{x}$$
$$= x \ln x$$
$$\frac{1}{y} \frac{dy}{dx} = \ln x + x(1/x)$$
$$\frac{dy}{dx} = y(\ln x + 1)$$
$$\frac{dy}{dx} = x^{x}(\ln x + 1)$$

(4) 39

$$E(p) = -\frac{pD'(p)}{D(p)} = -\frac{p(-3)}{200-3p} = \frac{(65)(3)}{200-3(65)} = 39$$