Mathematics 122 Quiz 4 Name: Key

1 pt (1) If $P(t) = 34(1.34)^t$ what is $P(25)$?

$P(25) =$ 51,179.84

$34 \times (1.34)^{25}$

2 pt (2) Let $f(x)$ be given by the table

x	0	1	3
$f(x)$	32.4	21.06	13.69

(a) Explain why this function is exponential. (This involves both doing some calculations and writing an English sentence.)

ratio at ① $= \frac{b(1)}{b(0)} = \frac{21.06}{32.4} = .65$

ratio at ② $= \frac{b(2)}{b(1)} = .65$

The ratios are constant so it is exponential.

2 pt (b) Give a formula for $f(x)$. $f(x) =$ $32.4(.65)^x$

$b(x) = b_0 a^x$

$b_0 =$ initial value $= b(0) = 32.4$

$a =$ ratio $= .65$