1. (2 points each) **True** or **False**. Circle True only if the statement is always true.

(a) The inverse function of $g(t) = (1.04)^t$ is $g^{-1}(t) = \frac{1}{(1.04)^t}$. T (F)

(b) $\ln(2^x + 2^{-x}) = 0$ T (F)

(c) If $22 = 18e^{2k}$, then $k = 1.003$. T (F)

(d) $\log(67.34(1.03)^t) = t(\log(67.34) + \log(1.03))$ T (F)

(e) The graph of the function $s(t) = 2\sin(2t + 3)$ is the graph of the function $y = 2\sin(2t)$ shifted 3 units to the left. T (F)

(f) If f' is increasing, then f is increasing. T (F)

2. (6 points) A function $f(x)$ has values given in the following table. Estimate the value of its derivative at $x = 1$.

x	.9	.98	.996	1.0	1.004	1.02	1.1
$f(x)$	.7969	.8342	.8410	.8427	.8444	.8508	.8802

(any of these)

$$f'(1) \approx \frac{f(1.004) - f(1)}{.004} = \frac{.8444 - .8427}{.004} = .425$$

or $$f'(1) \approx \frac{f(.996) - f(1)}{-.004} = \frac{.8410 - .8427}{-.004} = .425$$

or $$f'(1) \approx \frac{f(1.004) - f(.996)}{.008} = \frac{.8444 - .8410}{.008} = .425$$