

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