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 \( g^{-1}(t) = \frac{1}{(1.04)^t} \).  
\( \text{T} \quad \text{F} \)

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

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

(d) \( \log(67.34(1.03)^t) = t(\log(67.34) + \log(1.03)) \)  
\( \text{T} \quad \text{F} \)

(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.  
\( \text{T} \quad \text{F} \)

(f) If \( f' \) is increasing, then \( f \) is increasing.  
\( \text{T} \quad \text{F} \)

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

<table>
<thead>
<tr>
<th>( x )</th>
<th>.9</th>
<th>.98</th>
<th>.996</th>
<th>1.0</th>
<th>1.004</th>
<th>1.02</th>
<th>1.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>( f(x) )</td>
<td>.7969</td>
<td>.8342</td>
<td>.8410</td>
<td>.8427</td>
<td>.8444</td>
<td>.8508</td>
<td>.8802</td>
</tr>
</tbody>
</table>

\[
f'(1) \approx \frac{f(1.004) - f(1)}{0.004} = \frac{0.8444 - 0.8427}{0.004} = 42.5
\]

\[
f'(1) \approx \frac{f(1.004) - f(0.996)}{0.008} = \frac{0.8444 - 0.8410}{0.008} = 42.5
\]