1   If $f(x) = \ln(1+e^x)$. Find the value of $f'(1)$.

            b. $\dfrac{e}{1+e}$ **d.** $\dfrac{1}{1+e}$

a. 1   **c.** e **e.** $1+e$

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2   Find $\displaystyle\lim_{x\to 1}\frac{x^{2000}-1}{x-1}$

a. 1999   **b.** 2000   **c.** 2002   **d.** 2001   **e.** 2003

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3   Find $\dfrac{\sin 30^\circ}{\sin 10^\circ} - \dfrac{\cos 30^\circ}{\cos 10^\circ}$

          b. $\dfrac{\sqrt{3}}{2}$

a. 1   **c.** 0   **d.** 2   **e.** $\sqrt{3}$

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4   Find the number of real solutions for the following system of equations:

$$\begin{cases}(x^2 + y^2 - 4)(x - 2y + 2) = 0 \\ (x^2 + y^2 - 9)(x + y) = 0\end{cases}$$

a. 1   **b.** 2   **c.** 3   **d.** 4   **e.** 5

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5   A is a 2×2 matrix, which satisfies the following: $A\begin{pmatrix}1\\0\end{pmatrix}=\begin{pmatrix}1\\1\end{pmatrix}$ and $A\begin{pmatrix}1\\1\end{pmatrix}=\begin{pmatrix}2\\3\end{pmatrix}$

If $A\begin{pmatrix}3\\2\end{pmatrix}=\begin{pmatrix}p\\q\end{pmatrix}$, find the value $p + q$

a. 1   **b.** 2   **c.** 5   **d.** 10   **e.** 12

SCORE: