Class Drill 23: Conceptual Questions about Antiderivatives

Circle the correct answer. Check your answers by differentiating.

[1] The constant function \( f(x) = \pi \) is an antiderivative of the constant function \( k(x) = 0 \). \hspace{1cm} \text{true} \hspace{0.5cm} \text{false}

[2] The constant function \( k(x) = 0 \) is an antiderivative of the constant function \( f(x) = \pi \). \hspace{1cm} \text{true} \hspace{0.5cm} \text{false}

[3] The constant function \( k(x) = 0 \) is an antiderivative of itself. \hspace{1cm} \text{true} \hspace{0.5cm} \text{false}

[4] The function \( g(x) = 5e^x \) is an antiderivative of itself. \hspace{1cm} \text{true} \hspace{0.5cm} \text{false}

[5] The function \( h(x) = 5e^{\pi} \) is an antiderivative of itself. \hspace{1cm} \text{true} \hspace{0.5cm} \text{false}

[6] If \( n \) is an integer, then \( \frac{x^{n+1}}{n+1} \) is an antiderivative of \( x^n \). \hspace{1cm} \text{true} \hspace{0.5cm} \text{false}