Class Drill 15: 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 \( k(x) = 0 \).  
   true  false

[2] The constant function \( k(x) = 0 \) is an antiderivative of the constant function \( f(x) = \pi \).  
   true  false

[3] The constant function \( k(x) = 0 \) is an antiderivative of itself.  
   true  false

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

[5] The function \( g(x) = 5e^x \) is an antiderivative of itself.  
   true  false

[6] The function \( h(x) = 5e^\pi \) is an antiderivative of itself.  
   true  false