5. [6 points] Find a number \( k \) so that the following function is continuous on any interval.

\[
j(t) = \begin{cases} 
(t + 4)^3 & t < -2 \\
k t & t \geq -2
\end{cases}
\]

Using your value of \( k \), explain why this function is continuous on any interval.

6. [5 points] Using the limit definition of the derivative, write an explicit expression for the derivative of the function \( E(x) = x \cos x \) at \( x = 2 \). Do not try to calculate this derivative.