1. Find an equation for the tangent line to the curve
\[ y = \sin x - 5x \] at the point \((0, 3)\).

2. Find the first and second derivatives of the following functions.
   
   (a) \( f(x) = x^4 + 7x + 3e^x \)  
   (b) \( g(x) = \cos(x^4) \)

3. Suppose \( f \) and \( g \) are functions such that
\[
 f(5) = 3, \quad f'(5) = 1, \quad g(5) = 5 \quad \text{and} \quad g'(5) = 0.
\]
What is the derivative at \( x = 5 \) of the function \( h \) defined by
\[
 h(x) = \sin(\pi x) f(x) + g(x) \?
\]

4. On what interval is the function
\[
 f(x) = (x^2 + 1)e^x
\]
increasing?

5. If \( f(x) = \tan(x) \), find \( f'(\pi/6) \).

6. Consider the function \( y = f(x) \) defined implicitly by the equation
\[
 xy + x^2y^3 = 10,
\]
such that \( f(1) = 2 \). Find \( f'(1) \).