Slope of a nonlinear curve

Finding the slope of a straight line of the form $Y = a + bX$ is rather simple: the slope is given by $b$. What about the more general case of the unspecified equation $Y = f(X)$—How do we find its slope? If $f(X)$ is nonlinear, its slope may be different at each point, but as long as the function is continuous and differentiable at a particular point, its slope is given by the derivative of $f(X)$ evaluated at that point.

Consider for example the nonlinear continuous and differentiable function $Y = f(X) = X^2 + 4$. Suppose we want to know its slope at the point $(X, Y) = (3, 13)$. The derivative of this function is $f'(X) = 2X$, which takes on the value 6 when $X = 3$. Hence, the slope of this function is 6 at the point $(3, 13)$.