

3. (5 pts) Use the Fundamental Theorem of Calculus to calculate the exact value of the integral  $\int_3^4 (\frac{1}{x} - 4x) dx$ . **Show your work.**

4. (5 pts) Given that  $g'(3) = 8$ , and that when  $x = 3$ ,  $\frac{d}{dx}f(g(x)) = 20$ , find  $f'(g(3))$ .