Problem 1

Let $f(x) = 3\sin(x) - 4\cos(x) + 2x^3$. Find $f'(x)$.

Problem 2

Let $f(x) = 2\sin(x)\cos(x)$. Find $f'(x)$.

Problem 3

Find $\dfrac{d}{dx}\left(x^3\tan(x)\right)$.

Problem 4

Find $\dfrac{d}{dx}\left(\dfrac{7\sec(x) + \frac{2}{x}}{\sin(x)}\right)$.

Problem 5

Let $f(x) = 2(\cot(x) + x^2)\csc(x)$. Find $f'(x)$.

Problem 6

Let $f(x) = \dfrac{x\sin(x) + \cos(x)}{x^2 + 2x + 1}$. Find $f'(x)$.