1. Find equations of both lines through the point \((2,1)\) that are tangent to the curve \(y = x^3 + 1\).

2. Suppose that \(f'(2) = -3, g(2) = 4, f'(2) = -2\), and \(g'(2) = 7\). Find \(\left.\frac{d}{dx}\left(\frac{2g(x)}{1+f(x)}\right)\right|_{x=2}\).
3. If \( y = \frac{\ln x}{\sin(\pi x)e^x} \), then \( \left. \frac{dy}{dx} \right|_{x=1/2} = \)