

1. **(4 points)** Find the equation of a tangent line to the curve $f(x) = x^4$ at $(2, 16)$.
2. **(4 points)** For $f(t) = (4t^3 - 3t^2 + 2t - 1)$, evaluate $f'(t)$.
3. **(4 points)** Evaluate $\frac{d}{dx} \left(4\sqrt{x} - \frac{5}{x^6} \right)$.
4. **(4 points)** If $f(x) = \frac{3x-2}{x^2-4x}$, determine $f'(x)$.
5. **(4 points)** Evaluate $\frac{d}{dt} [(t^3 - 3t + 2)(t + t^{-1})]$.
6. **(2 point bonus)** Using only the product rule and the fact that $\frac{d}{dx}x = 1$, determine $\frac{d}{dx}\sqrt{x}$ on the back of this page.