2 (6 points)   Compute the integral $\int_{-1}^{3} \left| 4t - t^3 \right| dt.$

3 (8 points)   Let $f(x) = \int_{x^2}^{9} \cos\left(\pi\sqrt{t}\right) dt.$ Compute the equation of the tangent line to $y = f(x)$ at the point where $x = 3.$