

5. (9 points) Find the equation of the tangent line to the curve $2x^2y^2 - x^3 - y^5 + 1 = 0$ at the point $(2, 1)$.

6. (10 points) (a) Find the Taylor polynomial of degree two that approximates the function $(1 + 2x)^{\frac{3}{2}}$ at $x = 0$ (Show your work!).

(b) What is the local linearization of $(1 + 2x)^{\frac{3}{2}}$ near $x = 0$?

(c) Is the local linearization of $(1 + 2x)^{\frac{3}{2}}$ an overestimate or underestimate of the function? Why?