

1. $f(x) = \frac{4}{\sqrt{x}}$ Find the slope-intercept equation of the tangent line to $f(x)$ at $x = 1$

2. $f(x) = \frac{4}{\sqrt{x}}$ Find the 1st degree Taylor Polynomial, $P_1(x)$, for $f(x)$ centered at 1.

3. $f(x) = \frac{1}{x}$ Find the 4th Degree Taylor Polynomial, $P_4(x)$ centered at 1.

4. $f(x) = \ln x$ Find the 4th Degree Taylor Polynomial, $P_4(x)$ centered at 1.

5. $\cos(0.3) \approx 1 - \frac{(0.3)^2}{2!} + \frac{(0.3)^4}{4!}$ Use Taylor's Theorem (Lagrange Error) to obtain an upper bound for the error of the approximation.

6. $f(x) = \ln(x + 1)$ Find the degree of the Maclaurin polynomial required for the error of the approximation of $f(0.5)$ to be less than 0.0001.

7. $f(x) = e^x$ Find the degree of the Maclaurin polynomial required for the error of the approximation of $f(0.6)$ to be less than 0.001.