P-1

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MTH 263

Exam Two

1. Find the derivative of the following function, simplify your answer $f(x) = \sqrt{x^2 + 4x}$

see additional paper

2. Find the derivative of the following function. Simplify you answer to a single rationale expression. $f(x) = [\,(x - 1) / (2x + 3)\,]^3$

= see attached

3. Find the derivative of the function $f(x) = \ln(\cosh x^2)$ =

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$= \frac{d}{dx}[\ln\cosh(x^2))] \Rightarrow \frac{1}{\cosh(x^2)} \cdot \frac{d}{dx}[\cosh(x^2)]$

$\Rightarrow \frac{\sinh(x^2) \cdot \frac{d}{dx}[x^2]}{\cosh(x^2)} = \frac{\sinh(x^2) \cdot 2x}{\cosh x^2}$

4. Find the derivative dy/dx of the following equation $y^2 = x^3 - 26y$, then find the slope of the tangent line to the curve at the point (3, 1).

see additional pg