

Exam 1 Oct. 6, 2005
Math 25 Calculus I

SHOW ALL WORK

Either circle your answers or place on answer line.

3.) Find the equations of all vertical and horizontal asymptotes for $f(x) = \frac{-5(x^2-4)(2x-9)}{(x-2)(x-3)^2}$.
Show ALL steps.

[15] horizontal asymptotes) _____

[15] vertical asymptotes) _____

Find the following derivatives:

[15] 1.) $\frac{d}{dx}[3x \cdot \cos(x) \cdot \sin(2x)]$

Answer 1.) _____

[15] 2.) $\frac{d}{dx}[\cos(\sqrt{e^{x^2+1}})]$

Answer 2.) _____

[13] 4.) Find the derivative of $f(x) = \frac{1}{x}$ by using the definition of derivative.

$$f'(x) = \underline{\hspace{2cm}}$$

[12] 5.) Find the exact value of the following expression (SIMPLIFY your answer):

$$\log_4 10 + 3\log_4 2 - \log_4 5 + 4^{\log_4 3} + \log_4 1 = \underline{\hspace{2cm}}$$

