

Name: _____

Calculus Practice Quiz #2

This quiz is to determine if you have mastered the material by attending tutoring sessions and completing your homework. Please write legibly and show as much work as possible for each problem.

1. Find the vertical asymptotes of each function. Justify your answers.

a. $f(x) = \frac{x+4}{1-2\cos x}$, $[0, \pi]$ b. $f(x) = \frac{x+3}{(x+1)(2x^2-18)}$

c. $f(x) = \frac{\sqrt{x^2-6x}}{x^2-4x-5}$ d. $f(x) = \frac{\sqrt{x-1}}{\sqrt{x+3}-2}$

2. Use only the definition of the derivative to compute a formula for $f'(x)$.

a. $f(x) = \frac{8}{\sqrt{x-3}}$ b. $f(x) = \frac{3}{x^2}$

c. $f(x) = 3\sin 4x$ d. $f(x) = \cos 2x$

3. Use the derivative rules developed so far (not using the **Chain Rule**), find a formula for dy/dx .

a. $y = \frac{3}{5x}$ b. $y = 4\sqrt{x} \sec x$

c. $y = \frac{x^2+2}{2x-7}$ d. $y = \sqrt{\frac{5}{x}}$

e. $y = x^3 \tan x$ f. $y = (\cos x)(3x^2 - 3x + 1)$