

Quiz #1c: Review of Calculus I

Show all work in a neat and logical manner in order to get full credit.
No Calculators are allowed.

6 pts.

1. Find the indicated limit or show that it does not exist.

(a) $\lim_{x \rightarrow 1} \frac{x^2 + x - 2}{x^2 - 1}$

(b) $\lim_{x \rightarrow \infty} \frac{x^2}{x^2 + 3x + 6}$

12 pts.

2. Find the derivative of the following functions. Simplify your answers, if possible.

(a) $f(x) = (x^3 + 3)(x^2 + 2)$

(b) $g(x) = \frac{x^2 + 3}{x}$

Don't forget the back! \Rightarrow

(c) $h(x) = \sin^3(6x^3)$

12 pts. 3. Find the indefinite integral

(a) $\int \sqrt{5x+2} \, dx$

(b) $\int \frac{2}{x^3} - x^4 \, dx$

(c) $\int \sqrt[5]{w} \, dw$

Points earned: _____ **out of a possible 30 points**