

# Calculus Quiz

Your Name:

Please: Put tablets away. Show all work.

A. Polynomial

B. Constant Multiple

C. Product

D. Quotient

E. Power (or Root)

F. Replacement Theorem

G.  $\lim_{x \rightarrow a} f(x) = f(a)$

...if  $f$  is continuous at  $a$

(1-3) Compute the limit. Indicate which of the above properties you used. Is the function continuous at this location?

1.  $\lim_{x \rightarrow 1} \frac{x-1}{\sqrt{x}-1}$

2.  $\lim_{x \rightarrow 0} \frac{(x-2)^2 - 4}{x}$

3.  $\lim_{x \rightarrow 2} \left( \frac{7x^2 - 2x - 4}{5 \cos(\pi x)} \right)^3$

4. Find all discontinuities on the function. For each discontinuity, say what part(s) of the definition of continuity fail.

$$f(x) = \frac{x^2 - 3x + 2}{x^2 - 1}$$

5. Which properties of continuity indicate that the function is continuous on its domain? Is the function continuous on the interval  $[2,3]$ ? Prove or disprove.

$$f(x) = \sec(5x^3 - x)$$

