MAT 136 (Calculus I), Prof. Jim Swift
Worksheet 10 = Quiz 3

Name: key

No notes, no calculators allowed. ~~Due~~ Do your own work. (Same rules as for the Midterm.)

Evaluate the limit. For full credit, use good grammar and show the important steps. I will take off points if you lie.

$$\lim_{x\to 3}\frac{x^2-4x+3}{x-3} = \lim_{x\to 3}\frac{(x-3)(x-1)}{x-3} = \lim_{x\to 3}(x-1) = 3-1 = \boxed{2}$$

That's enough: but you can show more work if you want:

$x^2-4x+3 = (x-3)(x-1) = x^2-x-3x+(-3)(-1)$ ✓

$f(x) = \frac{x^2-4x+3}{x-3}$ has $f(3)$ undefined: $f(3) = \frac{3^2-4\cdot 3+3}{3-3} = \frac{0}{0}$

$\tilde{f}(x) = x-1$ is continuous at 3 and $f(x) = \tilde{f}(x)$ for $x \neq 3$.