

Name _____

Mathematics 105: Calculus I
Fall Semester 2009
David Haines
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Quiz #8

Here is a formula for $f(x)$: $f(x) = x^2$

The formula for $f'(x)$ is: _____

The formula for $f''(x)$ is: _____

Evaluate these limits:

A.
$$\lim_{h \rightarrow 0} \frac{f'(3+h) - f'(3)}{h} =$$

B.
$$\lim_{h \rightarrow 0} \frac{f(4+h) - f(4)}{h} =$$

C.
$$\lim_{x \rightarrow 5} \frac{f'(x) - f'(5)}{x - 5} =$$

D.
$$\lim_{x \rightarrow 1} \frac{f(x) - f(1)}{x - 1} =$$