

Math 181 Honors Quiz 9 Version A

1. Fill in the derivatives in the following table:

$f(x)$	$f'(x)$
x^r	<input type="text"/>
$\sin x$	<input type="text"/>
$\cos x$	<input type="text"/>
$\tan x$	<input type="text"/>
$\arcsin x$	<input type="text"/>
$\arccos x$	<input type="text"/>
$\arctan x$	<input type="text"/>
$x^2 + x - 6$	<input type="text"/>
$\frac{x+1}{x-1}$	<input type="text"/>
$\sin(x^2 + 1)$	<input type="text"/>
$x \arctan x$	<input type="text"/>
$\sin^2 x + \cos^2 x$	<input type="text"/>

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2. Suppose $w(x) = f(x^2)$ where f is a differentiable function. Use the limit laws to verify that $w'(x) = 2xf'(x^2)$.

3. Let f and g be differentiable. State w' in terms of f' and g' .

$w(x)$	$w'(x)$
$f(x) + g(x)$	<input type="text"/>
$f(x)g(x)$	<input type="text"/>
$\frac{1}{g(x)}$	<input type="text"/>
$\frac{f(x)}{g(x)}$	<input type="text"/>
$f(g(x))$	<input type="text"/>
$f^{-1}(x)$	<input type="text"/>