

Please show **all** your work! Answers without supporting work will not be given credit.
Write answers in spaces provided.

Name: _____

1. Find the derivative of the following functions:

(a) [3 pts] $f(x) = (3x - 1)^{100}$

$f'(x) =$ _____

(b) [4 pts] $g(x) = 20 \tan^2(5x + 1)$

$g'(x) =$ _____

2. [5 pts] Find the second derivative of $h(x) = \ln \sqrt{x^2 + 2}$

$h''(x) =$ _____