

Date:

Calculus I

Name: *Answer Key*

Section: **Derivative Gateway Quiz** (version #129) ID:

Evaluate each expression. Calculators are **not** allowed.

At least 9 must be correct for any credit. Allowed time: 10 minutes.

1.  $\frac{d}{dx}\left(\frac{x^2+2}{x+2}\right) = \frac{x^2+4x-2}{(x+2)^2}$   
(write as a fraction with simplified numerator)

2.  $\frac{d}{ds}(\ln(\cos(5s))) = -5 \tan 5s$

3.  $\frac{d}{dx}(e^x \sin(5x)) = e^x (\sin 5x + 5 \cos 5x)$

4.  $\frac{d}{dt}(2 \ln(6t)) = \frac{2}{t}$

5.  $\frac{d}{dx}(5 \cos(-5x)) = 25 \sin(-5x)$

6.  $\frac{d}{dx}(3 \tan(5x)) = 15 \sec^2 5x$

7.  $\frac{d}{dr}(-4e^{2r}) = -8e^{2r}$

8.  $\frac{d}{dx}(\tan^{-1}(3x)) = \frac{3}{1+9x^2}$

9.  $\frac{d}{dy}(7y^3 + 5y^2 - 3y + 2) = 21y^2 + 10y - 3$

10.  $\frac{d}{dt}(7 \sin(4t)) = 28 \cos 4t$