Name: _____ Grade: _____

Group Members Present:

_____, _____, &_____

For each function, identify an inside and outside function. Write an expression for the derivative.

1. $y=\left(3x^5-2x\right)^4$

   inside: $u(x)=$

   outside: $y(u)=$

   $\frac{dy}{dx}=$

2. $g(t)=12\ln\left(5x^2+x\right)$

   inside: $u(t)=$

   outside: $g(u)=$

   $\frac{dg}{dt}=$

3. $f(x)=4\sqrt{3^x-6e^x}$

   inside: $u(x)=$

   outside: $f(u)=$

   $\frac{df}{dx}=$

4. $g(x)=4\left(x^2+2^x\right)^{10}$

   inside: $u(x)=$

   outside: $g(u)=$

   $\frac{dg}{dx}=$

5. $g(x)=\frac{12}{\left(5x^3-1\right)^3}$

   inside: $u(x)=$

   middle: $v(u)=$

   outside: $g(v)=$

   $\frac{dg}{dx}=$

6. $g(t)=13e^{2t^2}+\ln t^4$

   inside: $u(t)=$

   middle: $v(u)=$

   outside: $g(v)=$

   $\frac{dg}{dt}=$

7. $f(x)=(3x-2e^x)^3$ dogs gives the number of dogs with fleas x days after the start of spring for $0\le x\le 91$. Write a model for the derivative.