MATH 201 Your name: _____

Learning target DF3, version 3

Demonstrate and explain how to find the derivative of the following functions. Be sure to write down which derivative rules (constant multiple, sum/difference, etc.) you are using in your work.

1. $h(x) = 9x^5 - x^4 - x^3 - 6$

2. $f(y) = -2e^y - 4\sin(y)$

3. $g(t) = \sqrt[3]{t^7} + \dfrac{2}{t^2}$

MATH 201 Your name: _____

Learning target DF4, version 3

Demonstrate and explain how to find the derivative of the following functions. Be sure to write down which derivative rules (product, quotient, sum and difference, etc.) you are using.

1. $g(w) = -\dfrac{2w^2+6w+1}{w^{\frac{1}{5}}}$

2. $f(w) = -\dfrac{\sin(w)}{3w^2-3w+4}$

3. $h(w) = -\left(2w^2+5w-5\right)e^w$

MATH 201 Your name: _____

Learning target DF5, version 3

Demonstrate and explain how to find the derivative of the following functions. Be sure to write down which derivative rules (constant multiple, sum, chain, etc.) you are using.

1. $k(w) = -(5w + 2e^w + 1)^3$

2. $g(y) = 3\sin\left(y^{2/5}\right)$

3. $h(x) = 6\cos\left(-5x^2 - x + 4\right)$

4. $f(t) = 3\left(\sin(t)\right)^{2/5}$

MATH 201 Your name: _____

Learning target DF6, version 3

Demonstrate and explain how to find the derivative of the following functions. Be sure to write down which derivative rules (constant multiple, sum and difference, etc.) you are using.

1. $f(t) = \sqrt{\cos\left(-t^4 - 6\right)}$

2. $h(x) = \left(\dfrac{5x^5 - 2}{3\left(x^3 - 1\right)}\right)^4$

3. $g(w) = \left(3w^3 + 2w^2\right)^3 w^{\frac{1}{3}}$

MATH 201 Your name: _____

Learning target DF7, version 3

Use implicit differentiation to find $\frac{dy}{dx}$, aka y', for the equations below.

1. $x^5 - 8y^4 = \sin(y) - 7$

2. $-5y\cos(x) + 3e^x = 0$