

**MATH 210 – Differential Equations****Section Question: 2.2**Name: Ryan Coyne

Date: \_\_\_\_\_

1. Solve  $3xy' = 5x^3 \sec y$ 

$$3x \frac{dy}{dx} = 5x^3 \sec y$$

$$\int \cos y \, dy = \int \frac{5}{3} x^2 \, dx$$

$$\sin y = \frac{5}{9} x^3 + C$$

$$y = \sin^{-1} \left( \frac{5}{9} x^3 + C \right)$$

Implicit Solution:  $\sin y = \frac{5}{9} x^3 + C$

Explicit Solution:  $y = \sin^{-1} \left( \frac{5}{9} x^3 + C \right)$