Worksheet 6: Exact Equations

MATH 2310, Spring 2019   Grade: / 40

1. (10 pts) Determine whether the equation

$$(2x + 4y) + (2x - 2y)y' = 0$$

   is exact. If it is exact, find the solution.

2. (10 pts) Determine whether the equation

$$(2xy^2 + 2y) + (2x^2y + 2x)y' = 0$$

is exact. If it is exact, find the solution.

3. (20 pts) Determine if the equation

$$y\,dx + (2xy - e^{-2y})\,dy = 0$$

is exact. If it is not exact, find an integrating factor and solve it.