## Assignment Math45-Module-06-Exercises due 10/01/2020 at 11:59pm PDT

1. (1 point) Are the following differential equations exact?

(a) [Choose/Exact/Not Exact] 
$$(y^2 + x^2) \frac{dy}{dx} + (2xy + 1) = \frac{3}{x} - 1$$
.

- (b) [Choose/Exact/Not Exact]  $(y + \cos(y) \sin(x)) dx + (x x\sin(y)) dy = 0$ .
- (c) [Choose/Exact/Not Exact] y dx + y dy = 0.

## **2.** (1 point)

The following differential equation is exact. Find a function F(x, y) such that F(x, y) = C is a solution to the

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differential equation

$$ydy - xdx = 0.$$

$$F(x,y) =$$
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**3.** (1 point)

Solve the following differential equation:

$$(y-x^5)dx + (x+y^5)dy = 0.$$

\_ = constant. help (formulas)

## **4.** (1 point)

Enter a value for  $\pi$ 

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