Matthew Mendoza **Math-45-Krauel-F20**

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] $\left(y^2+x^2\right)\dfrac{dy}{dx}+(2xy+1)=\dfrac{3}{x}-1.$

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

(c) [Choose/Exact/Not Exact] $y\,dx+y\,dy=0.$

Correct Answers:

- Exact
- Exact
- Not Exact

---

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 differential equation

$$ydy-xdx=0.$$

$F(x,y)=$ _____

Correct Answers:

- 2*x^2-2*y^2

---

3. (1 point)

Solve the following differential equation:

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

_____ = constant. help (formulas)

Correct Answers:

- 6*x*y-x^6+y^6

---

4. (1 point)

Enter a value for π

_____

Correct Answers:

- 3.14159