Student ID:

Student Name:

Serial Number:

MATH201, Section 2
Fall 2018, Term 181

Quiz 4
Version A

Instructions: Show Your Work!

1. (3 pts) Find and sketch the domain of the function

$$f(x,y) = \frac{\sqrt{y-x^2}}{1-x^2}$$

2. (3 pts) Determine the set of the points at which the function is continuous.

$$f(x,y) = \begin{cases} \frac{xy^2}{x^3+xy^2+y^3} & \text{if } (x,y) \neq (0,0) \\ 0 & \text{if } (x,y) = (0,0) \end{cases}$$

3. (4 pts) At $(0,0)$, find the linear approximation of the function

$$f(x,y) = e^x \cos(xy)$$

Student ID:

Student Name:

Serial Number:

MATH201, Section 3
Fall 2018, Term 181

Quiz 4
Version B

Instructions: Show Your Work!

1. (3 pts) Find and sketch the domain of the function

$$f(x,y,z) = \sqrt{4-x^2} + \sqrt{4-y^2} + \sqrt{1-z^2}$$

2. (3 pts) Determine the set of the points at which the function is continuous.

$$f(x,y) = \begin{cases} \frac{xy}{x^2+xy+y^2} & \text{if } (x,y) \neq (0,0) \\ 0 & \text{if } (x,y) = (0,0) \end{cases}$$

3. (4 pts) At $(0,0)$, find the linear approximation of the function

$$f(x,y) = \frac{y-1}{x+1}$$