605-Wk15-Discussion

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Solution of Partial Derivatives using rSympy

For the the following equations:

Find $f_x, f_y, f_{xx}, f_{yy}, f_{xy}$ and f_{yx}

Exercise 9

9. $f(x, y) = x^2y + 3x^2 + 4y - 5$

```
## [1] "Given the variables:"

## [1] "x"

## [1] "y"

## [1] "fx:"

## [1] "6*x + 2*x*y"

## [1] "fy:"

## [1] "4 + x**2"

## [1] "fxx:"

## [1] "6 + 2*y"

## [1] "fyy:"

## [1] "0"

## [1] "fxy:"

## [1] "2*x"

## [1] "fyx:"

## [1] "2*x"
```

Exercise 10

$$13.\ f(x,y) = e^{x^2+y^2}$$

```
## [1] "Given the variables:"

## [1] "x"

## [1] "y"

## [1] "fx:"

## [1] "2*x*exp(x**2 + y**2)"

## [1] "fy:"

## [1] "2*y*exp(x**2 + y**2)"

## [1] "fxx:"

## [1] "2*exp(x**2 + y**2) + 4*x**2*exp(x**2 + y**2)"

## [1] "fyy:"

## [1] "2*exp(x**2 + y**2) + 4*y**2*exp(x**2 + y**2)"

## [1] "fxy:"

## [1] "4*x*y*exp(x**2 + y**2)"

## [1] "fyx:"

## [1] "4*x*y*exp(x**2 + y**2)"
```