DATA 605 - Discussion 15

Nick Oliver

Discussion 15 Section - 12.3 Exerecise 15 (pg 711)

In Exercises 9 - 26, find f_x, f_y, f_{xx}, f_{yy}, f_{xy} and f_{yx}.

15. $f(x, y) = sin(x)cos(y)$

I used the D function to compute the partial derivatives with respect to x and/or y

```
f <- expression(sin(x) * cos(y))
```

f_x
```
D(f, 'x')
```

```
## cos(x) * cos(y)
```

f_y
```
D(f, 'y')
```

```
## -(sin(x) * sin(y))
```

f_{xx}
```
D(D(f, 'x'),'x')
```

```
## -(sin(x) * cos(y))
```

f_{yy}
```
D(D(f, 'y'),'y')
```

```
## -(sin(x) * cos(y))
```

f_{xy}
```
D(D(f, 'x'),'y')
```

```
## -(cos(x) * sin(y))
```

f_{yx}
```
D(D(f, 'y'),'x')
```

```
## -(cos(x) * sin(y))
```