Week 3 - Syntax

Review

> Form of plot function is Plot[function, {variable, min, max}]
> Capital letters of functions
> Square brackets [ ]
> ‘Shift’ and ‘enter’

Operations

+ plus
- minus
/ divide
*multiply
^to the power of

Useful Shortcuts for Greek Letters

‘esc’ ‘letter’ ‘esc’

```
π
```

$$\pi$$

```
N[π]
```

```
3.14159
```

Order of Operations

Division:

```
x + y / z + w
```

$$w + x + \frac{y}{z}$$

```
(w + y) / (z + w)
```

$$\frac{w + y}{w + z}$$

Division and multiplication

```
(x + y) / (z + w) * p
```

$$\frac{p\ (x+y)}{w+z}$$

```
(x + y) / ((z + w) * p)
```

$$\frac{x+y}{p\ (w+z)}$$

Raising to the power:

```
y^x + 2
```

$$2 + y^{x}$$

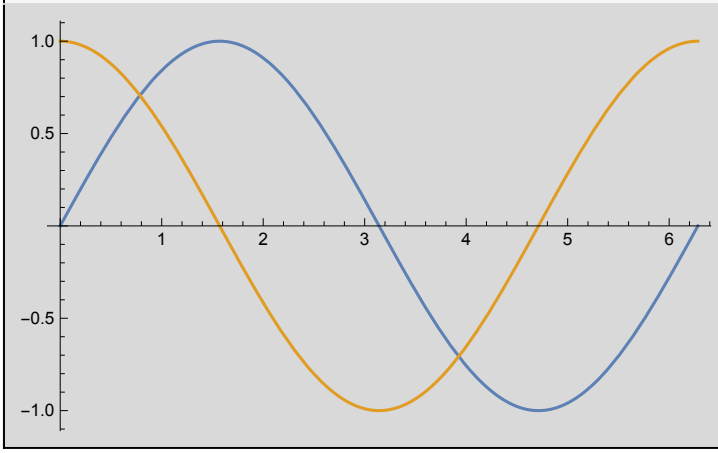
```
y^(x + 2)
```

$$y^{2+x}$$

Plotting Multiple Functions

```
Plot[{function1, function2, function3}, {variable, min, max}]
```

```
Plot[{Sin[x], Cos[x]}, {x, 0, 2 π}]
```




```
Plot[Sin[x], Cos[x], {x, 0, 2 π}]
```

Plot::nonopt : Options expected (instead of {x, 0, 2 π}) beyond position 2 in Plot[Sin[x], Cos[x], {x, 0, 2 π}]. An option must be a rule or a list of rules. >>

```
Plot[Sin[x], Cos[x], {x, 0, 2 π}]
```

Using the constant ‘e’

```
E
```

$$e$$

```
N[E]
```

```
2.71828
```

```
E^ (x^2 + 2)
```

$$e^{2+x^2}$$

```
Exp[x^2 + 2]
```

$$e^{2+x^2}$$

Summary

> N[ ] gives the numeric value of a quantity
> Plot[{function1, function2}, {variable, min, max}]
> ‘esc’ ‘letter’ ‘esc’ for Greek Letters
> Be aware of how *Mathematica* interprets your brackets.