

6. Laske $\sin(\pi)$ ja $\cos(\pi)$.

```
Sin[Pi]
```

```
0
```

```
Cos[Pi]
```

```
-1
```

7. Laske $\sqrt{-1}$, i^2 , i^3 , i^4 .

```
Sqrt[-1]
```

```
i
```

```
I^2
```

```
-1
```

```
I^3
```

```
-i
```

```
I^4
```

```
1
```

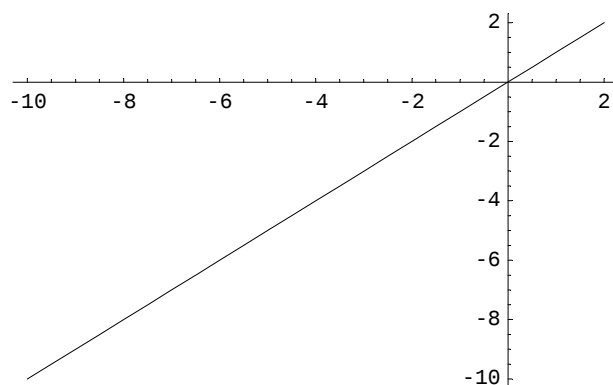
8. Ratkaise yhtälö $z^4 = -1$.

```
Solve[z^4 == -1, z]
```

```
{{z -> -(-1)^(1/4)}, {z -> (-1)^(1/4)}, {z -> -(-1)^(3/4)}, {z -> (-1)^(3/4)}}
```

9. Piirrä käyrä $y=x$ välillä $[-10,2]$.

```
In[79]:= Plot[x, {x, -10, 2}]
```



```
Out[79]= - Graphics -
```

11. Kokeile mitä ?? tekee! Käytä esimerkkinä vaikka Plot-komentoa.

In[80]:= ?? Plot

Plot[f, {x, xmin, xmax}] generates a plot of f as a function of x from xmin to xmax. Plot[{f1, f2, ... }, {x, xmin, xmax}] plots several functions fi. More...

Attributes[Plot] = {HoldAll, Protected}

Options[Plot] = {AspectRatio $\rightarrow \frac{1}{\text{GoldenRatio}}$, Axes $\rightarrow$ Automatic, AxesLabel $\rightarrow$ None, AxesOrigin $\rightarrow$ Automatic, AxesStyle $\rightarrow$ Automatic, Background $\rightarrow$ Automatic, ColorOutput $\rightarrow$ Automatic, Compiled $\rightarrow$ True, DefaultColor $\rightarrow$ Automatic, Epilog $\rightarrow$ {}, Frame $\rightarrow$ False, FrameLabel $\rightarrow$ None, FrameStyle $\rightarrow$ Automatic, FrameTicks $\rightarrow$ Automatic, GridLines $\rightarrow$ None, ImageSize $\rightarrow$ Automatic, MaxBend $\rightarrow$ 10., PlotDivision $\rightarrow$ 30., PlotLabel $\rightarrow$ None, PlotPoints $\rightarrow$ 25, PlotRange $\rightarrow$ Automatic, PlotRegion $\rightarrow$ Automatic, PlotStyle $\rightarrow$ Automatic, Prolog $\rightarrow$ {}, RotateLabel $\rightarrow$ True, Ticks $\rightarrow$ Automatic, DefaultFont $\rightarrow$ \$DefaultFont, DisplayFunction $\rightarrow$ \$DisplayFunction, FormatType $\rightarrow$ \$FormatType, TextStyle $\rightarrow$ \$TextStyle}

12. Tutki, osaako Mathematica antaa tietoja jonkin komennon optioiden käytöstä ?-komennon avulla.

In[81]:= ? Solve

Solve[eqns, vars] attempts to solve an equation or set of equations for the variables vars. Solve[eqns, vars, elims] attempts to solve the equations for vars, eliminating the variables elims. More...