```
> restart
```

Facitliste

Opgave 401
```
> (5+I)*(1+9*I);
```
$$-4 + 46\,I \qquad (1)$$

```
> I+I^2+I^3+I^4;
```
$$0 \qquad (2)$$

```
> 1/(1+3*I)+1/(1+3*I)^2;
```
$$\frac{1}{50} - \frac{9}{25}\,I \qquad (3)$$

```
> 1/(1+I)^4;
```
$$\frac{-1}{4} \qquad (4)$$

Opgave 402
```
> (1+3/(1+I))^2;
```
$$4 - \frac{15}{2}\,I \qquad (5)$$

Opgave 403
```
> (3+2*I)*(1+I)^2+(5+I)*(1+9*I);
```
$$-8 + 52\,I \qquad (6)$$

```
> 1/(1+3*I)+1/(1+3*I)^2-9/(25*I);
```
$$\frac{1}{50} \qquad (7)$$

Opgave 404
```
> I/(1+I)^4+1/2*(1/(sqrt(3)-I)-1/(sqrt(3)+I));
```
$$-\frac{1}{4}\,I + \frac{1}{2}\,\frac{1}{\sqrt{3} - I} - \frac{1}{2}\,\frac{1}{\sqrt{3} + I} \qquad (8)$$

```
> simplify(%);
```
$$0 \qquad (9)$$

```
> 1+I+I^2+I^3;
```
$$0 \qquad (10)$$

Opgave 406
```
> evalc(polar(4,-Pi));
```
$$-4 \qquad (11)$$

```
> evalc(polar(2,4*Pi/3));
```
$$-1 - I\sqrt{3} \qquad (12)$$

```
> evalc(polar(6,21*Pi/4));
```
$$-3\sqrt{2} - 3\,I\sqrt{2} \qquad (13)$$

Opgave 408
```
> polar(-4-4*I);
```

$$\mathrm{polar}\left(4\sqrt{2}, -\frac{3}{4}\pi\right) \tag{14}$$

```
> polar(2*sqrt(3)-6*I);
```
$$\mathrm{polar}\left(4\sqrt{3}, -\frac{1}{3}\pi\right) \tag{15}$$

```
> polar(4/(1+I));
```
$$\mathrm{polar}\left(2\sqrt{2}, -\frac{1}{4}\pi\right) \tag{16}$$

Opgave 409
```
> evalc(polar(2,4*Pi/3));
```
$$-6\,I \tag{17}$$

```
> evalc(polar(14,15*Pi));
```
$$-14 \tag{18}$$

```
> evalc(polar(1/4,-13*Pi/6));
```
$$\frac{1}{8}\sqrt{3} - \frac{1}{8}\,I \tag{19}$$

```
> evalc(polar(2,-Pi/8));
```
$$2\cos\left(\frac{1}{8}\pi\right) - 2\,I\sin\left(\frac{1}{8}\pi\right) \tag{20}$$

```
> convert(%,radical);
```
$$\sqrt{2+\sqrt{2}} - I\sqrt{2-\sqrt{2}} \tag{21}$$

Opgave 412
```
> abs((2-3*I)^2/(8+6*I)^2);
```
$$\frac{13}{100} \tag{22}$$

```
>
```