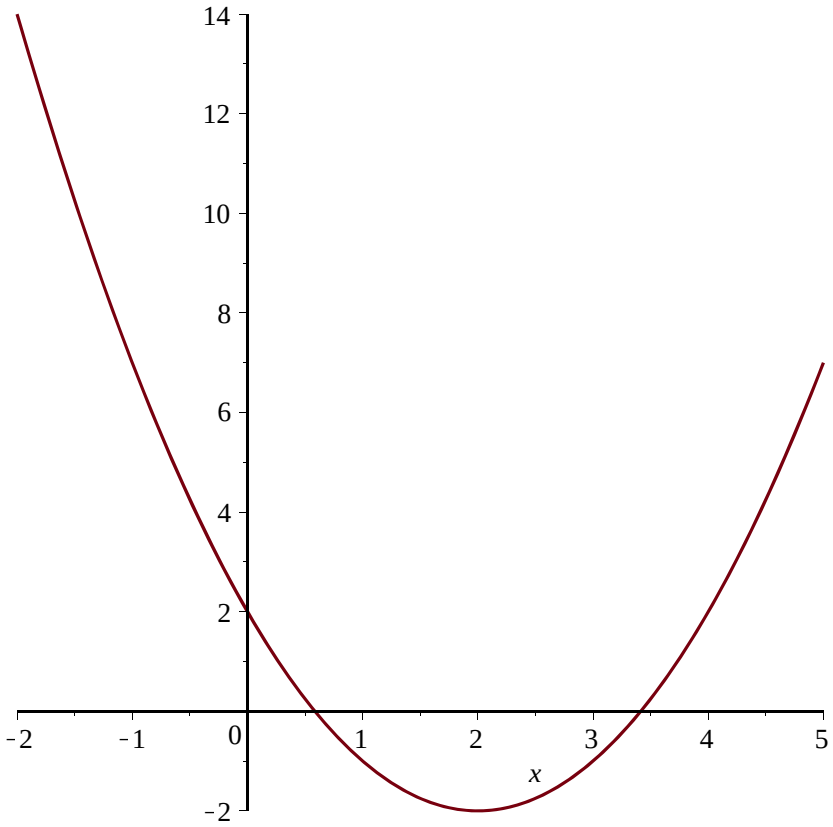
> $p := x^2 - 4\,x + 2;$

$$p := x^2 - 4\,x + 2 \quad \textbf{(1)}$$

> $plot(p, x = -2..5);$



> $factor(p)$ # *Faktoriserar polynomet p med den typ av koefficienter som polynomet innehåller*

$$x^2 - 4\,x + 2 \quad \textbf{(2)}$$

> $factor(p, real);$ # *Faktoriserar polynomet p med reella koefficienter*

$$(x - 0.5857864376)\,(x - 3.414213562) \quad \textbf{(3)}$$

> $solve(p = 0, x);$ # *Löser ekvationen p=0 exakt (algebraiskt)*

$$2 + \sqrt{2}, 2 - \sqrt{2} \quad \textbf{(4)}$$

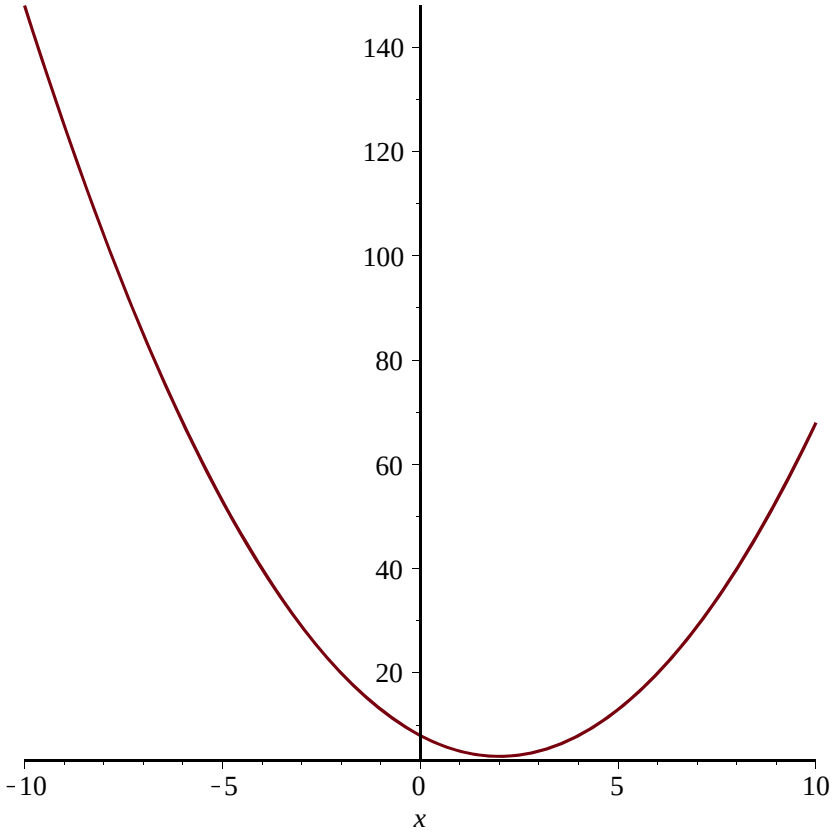
> $fsolve(p = 0, x);$ # *Löser ekvationen p=0 approximativt (numeriskt)*

$$0.5857864376, 3.414213562 \quad \textbf{(5)}$$

> $q := x^2 - 4\,x + 8;$

$$q := x^2 - 4\,x + 8 \quad \textbf{(6)}$$

> $plot(q);$




```
> factor(q, real); # Faktoriserar polynomet  med reella koefficienter
```

$$x^2 - 4.000000000\,x + 8.000000000 \quad \textbf{(7)}$$

```
> factor(q, complex); # Faktoriserar polynomet  med komplexa koefficienter
```

$$(x - 2.000000000 + 2.000000000\,\mathrm{I})\,(x - 2. - 2.000000000\,\mathrm{I}) \quad \textbf{(8)}$$

```
> solve(q = 0, x);
```

$$2 + 2\,\mathrm{I},\ 2 - 2\,\mathrm{I} \quad \textbf{(9)}$$

```
> solve(x^5 + x^4 - 2 x + 1 = 0 x);
```

$$\frac{1}{2}\sqrt{5} - \frac{1}{2},\ -\frac{1}{2} - \frac{1}{2}\sqrt{5},\ \frac{1}{6}\left(108 + 12\sqrt{93}\right)^{1/3} - \frac{2}{\left(108 + 12\sqrt{93}\right)^{1/3}},\ -\frac{1}{12}\left(108 + 12\sqrt{93}\right)^{1/3} + \frac{1}{\left(108 + 12\sqrt{93}\right)^{1/3}} + \frac{1}{2}\cdot\mathrm{I}\sqrt{3}\left(\frac{1}{6}\left(108 + 12\sqrt{93}\right)^{1/3} + \frac{2}{\left(108 + 12\sqrt{93}\right)^{1/3}}\right),\ -\frac{1}{12}\left(108 + 12\sqrt{93}\right)^{1/3} + \frac{1}{\left(108 + 12\sqrt{93}\right)^{1/3}} - \frac{1}{2}\cdot\mathrm{I}\sqrt{3}\left(\frac{1}{6}\left(108 + 12\sqrt{93}\right)^{1/3} + \frac{2}{\left(108 + 12\sqrt{93}\right)^{1/3}}\right) \quad \textbf{(10)}$$

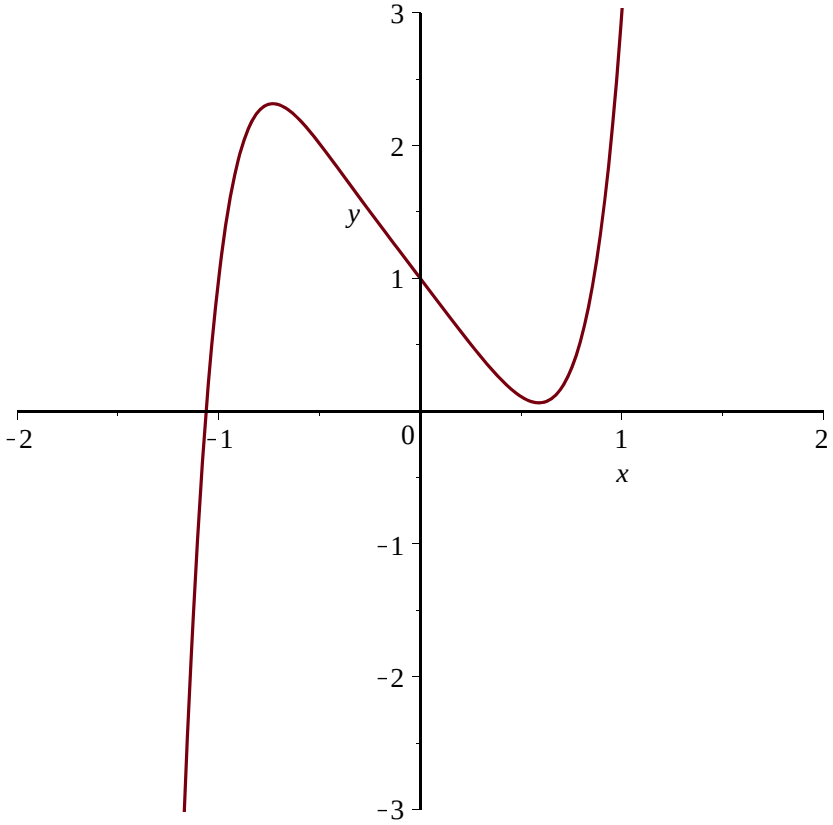
```
> solve(2 x^7 + x^5 + x^4 - 2 x + 1 = 0, x);
```

$$-\frac{1}{2}-\frac{1}{2}\cdot I\sqrt{3},\ -\frac{1}{2}+\frac{1}{2}\cdot I\sqrt{3},\ RootOf\left(2\_Z^5-2\_Z^4+\_Z^3+2\_Z^2-3\_Z+1,\ index=1\right),\ RootOf\left(2\_Z^5-2\_Z^4+\_Z^3+2\_Z^2-3\_Z+1,\ index=2\right),\ RootOf\left(2\_Z^5-2\_Z^4+\_Z^3+2\_Z^2-3\_Z+1,\ index=3\right),\ RootOf\left(2\_Z^5-2\_Z^4+\_Z^3+2\_Z^2-3\_Z+1,\ index=4\right),\ RootOf\left(2\_Z^5-2\_Z^4+\_Z^3+2\_Z^2-3\_Z+1,\ index=5\right) \quad \textbf{(11)}$$

> $fsolve\left(2x^7+x^5+x^4-2x+1=0,\ x\right);$

$$-1.061894615 \quad \textbf{(12)}$$

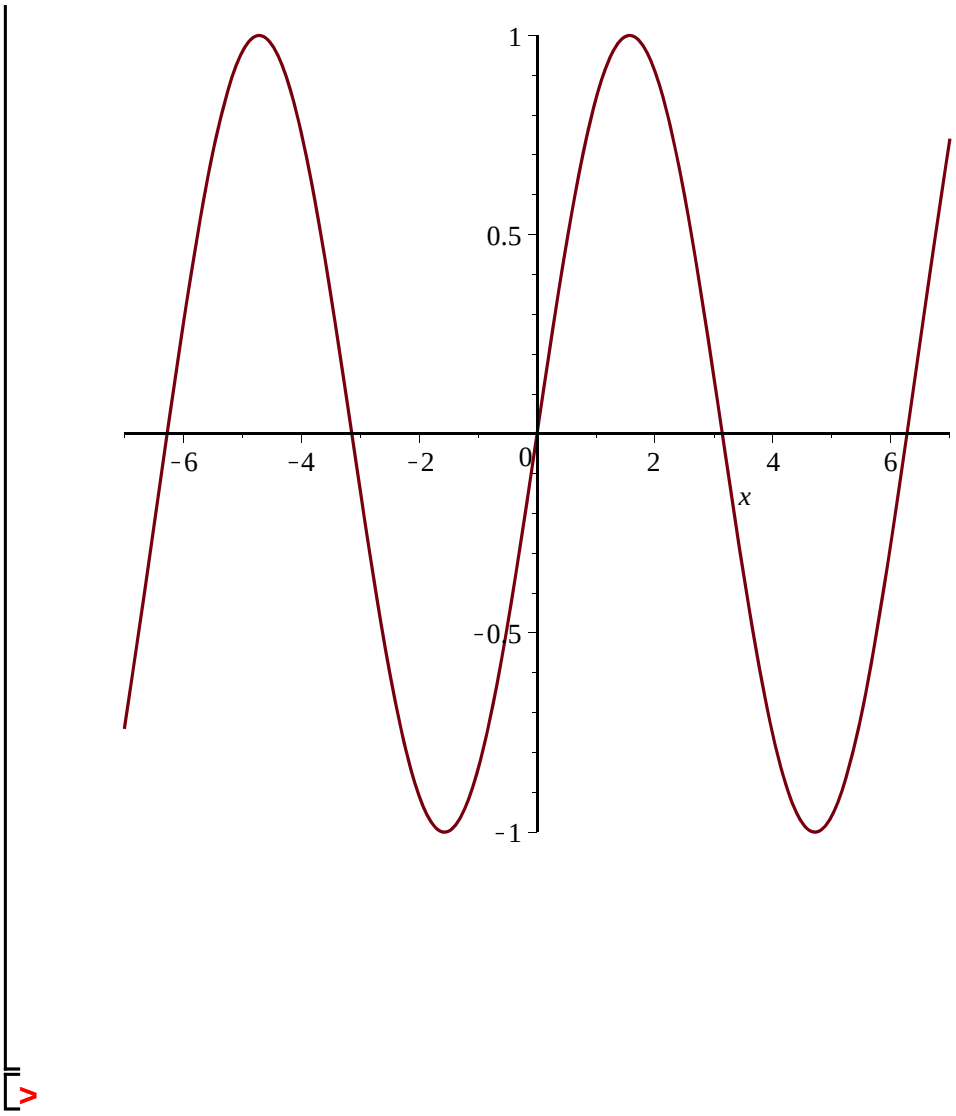
> $plot\left(2x^7+x^5+x^4-2x+1,\ x=-2..2,\ y=-3..3\right)$



> $s:=x-\frac{x^3}{3!}+\frac{x^5}{5!}-\frac{x^7}{7!}+\frac{x^9}{9!}-\frac{x^{11}}{11!}+\frac{x^{13}}{13!}-\frac{x^{15}}{15!}+\frac{x^{17}}{17!};$

$$s:=x-\frac{1}{6}x^3+\frac{1}{120}x^5-\frac{1}{5040}x^7+\frac{1}{362880}x^9-\frac{1}{39916800}x^{11}+\frac{1}{6227020800}x^{13}-\frac{1}{1307674368000}x^{15}+\frac{1}{355687428096000}x^{17} \quad \textbf{(13)}$$

> $plot(s,\ x=-7..7);$


1
0.5
-0.5
-1
-6
-4
-2
0
2
4
6
x