```
> (11-12*I)/(13+14*I);
```

$$\frac{-5}{73} - \frac{62}{73} I$$

```
> evalc((sqrt(2)-I)^9);
```

$$73\sqrt{2} + 95\, I$$

```
> a:=n->exp(n!+exp(-n!))-exp(n!);
```

$$a := n \rightarrow \mathbf{e}^{(n! + \mathbf{e}^{(-n!)})} - \mathbf{e}^{(n!)}$$

```
> evalf(a(2));
```

1.070826387

```
> evalf(a(3));
```

1.0012403

```
> evalf(a(4));
```

0.

```
> evalf(a(5));
```

0.

```
> evalf(a(2),30);
```

1.07082638925784101605074806360

```
> evalf(a(3),30);
```

1.001240400758622614501220694

```
> evalf(a(4),30);
```

1.0000000000188756723

```
> evalf(a(5),30);
```

0.

```
> evalf(a(5),100);
```

1.00000000000000000000000000000000000000000000014

```
> evalf(a(8),10000);
```

0.

```
> evalf(a(8),20000);
```

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```

```
> ifactor(494318804093);
```

$$(13723)\ (2963)\ (12157)$$

```
> nextprime(494318804093);
```

494318804101

```
> sum(k^6,k=1..n);
```

$$\frac{1}{7}(n+1)^7-\frac{1}{2}(n+1)^6+\frac{1}{2}(n+1)^5-\frac{1}{6}(n+1)^3+\frac{1}{42}n+\frac{1}{42}$$

```
> collect(%,n);
```

$$\frac{1}{7}n^7+\frac{1}{2}n^6+\frac{1}{2}n^5-\frac{1}{6}n^3+\frac{1}{42}n$$

```
> C:=product(1-1/(4*k^2),k=1..infinity);
```

$$C := 2\,\frac{1}{\pi}$$

```
> c:=n->product(1-1/(4*k^2),k=1..n);
```

$$c := n \to \prod_{k=1}^{n} \left(1 - \frac{1}{4}\frac{1}{k^2}\right)$$

```
> c(n);
```

$$2\,\frac{\left(\frac{1}{4}\right)^{(n+1)}\,(2^{(n+1)})^{2}\,\Gamma\left(n+\frac{1}{2}\right)\Gamma\left(n+\frac{3}{2}\right)}{\Gamma(n+1)^{2}\,\pi}$$

```
> evalf(abs(c(10)-C));
```

.0153336516

```
> R:=a/(x^2-a^2)+(x-a^5)/(x^6-a^6);
```

$$R := \frac{a}{x^2 - a^2} + \frac{x - a^5}{x^6 - a^6}$$

```
> normal(R);
```

$$\frac{(a\,x^3 + a^3\,x + 1)\,x}{x^6 - a^6}$$

```
> convert(R,parfrac,x);
```

$$\frac{1}{2}\frac{1}{x-a} - \frac{1}{2}\frac{1}{x+a} - \frac{1}{6}\frac{-1+a^4}{a^4\,(x-a)} + \frac{\frac{1}{6}\,(a^4+1)}{a^4\,(x+a)} + \frac{\frac{1}{6}\,(a+2\,a^5 - x + x\,a^4)}{a^4\,(x^2 + x\,a + a^2)} - \frac{1}{6}\frac{-2\,a^5 + a + x\,a^4 + x}{a^4\,(x^2 - x\,a + a^2)}$$

```
>
>
>
>
```