```
> restart
> f := unapply(arctan(x), x)
```

$$f := x \to \arctan(x) \tag{1}$$

```
> Tf := unapply(convert(taylor(f(x), x = 0), polynom), x);
```

$$Tf := x \to x - \frac{1}{3}x^3 + \frac{1}{5}x^5 \tag{2}$$

```
> evalf(Tf(1))
```

$$0.8666666667 \tag{3}$$

```
> evalf(f(1))
```

$$0.7853981635 \tag{4}$$

```
> Rf := unapply( (x^(n+1)·diff(f(x), x$n)·Theta·x)/(n+1)!, x)
```

$$Rf := x \to \frac{1}{2}\,\frac{x^{n+1}\,2^n\,\mathrm{MeijerG}\left(\left[\left[0, 0, \frac{1}{2}\right], [\,]\right], \left[[0], \left[-\frac{1}{2}+\frac{1}{2}n, \frac{1}{2}n\right]\right], x^2\right) x^{1-n}\,\Theta x}{(n+1)!} \tag{5}$$

```
> n := 1 : while evalf(|unapply(convert(taylor(f(x), x = 0, n), polynom), x)(1) − f(1)|)
      > 1/100000 do n := n + 1000 end do: n
```

$$51001 \tag{6}$$

```
>
```