

```
In [1]: using TaylorSeries
```

```
displayBigO(false)
```

```
function hermite_polynomials(::Type{T}, nmax::Int) where {T <: Integer}
```

```
    x = Taylor1{T}(T, nmax)    # Taylor variable
```

```
    H = fill(x, nmax + 1)    # vector of Taylor series to be overwritten
```

```
    H[1] = 1    # order 0
```

```
    H[2] = 2x    # order 1
```

```
    for n in 2:nmax
```

```
        # recursion relation for order n:
```

```
        H[n+1] = 2x * H[n] - 2(n-1) * H[n-1]
```

```
    end
```

```
    return H
```

```
end
```

```
hermite_polynomials(n) = hermite_polynomials{Int}(n);
```

```
H = hermite_polynomials(10);
```

```
function hermite_polynomial(n::Int)
```

```
    @assert 0 ≤ n ≤ length(H) "Not enough Hermite polynomials generated"
```

```
    return H[n+1]
```

```
end
```

```
hermite_polynomial(6)
```

```
Out[1]: - 120 + 720 t2 - 480 t4 + 64 t6
```