Oving2_oppg2

September 19, 2021

1 Oppgave 2

[2]:
```
from sympy.abc import x
from sympy import integrate
a=-2
b=1
#Define the inner poduct
def scp(p,q):
    return integrate(p*q, (x, a, b))
#Define polynomials
p0 = 1
phi1 = x
#Calculate the inner product and print it.
print(scp(p0,phi1))
```

```
-3/2
```

[34]:
```
p1 = x + 1.0/2
phi2 = x**2
p2 = x**2 + x - 1.0/2
phi3 = x**3
p3 = x**3 + 3.0/2 * x**2 - 3.0/5 * x - 11.0/20
tr = 10**(-10)

print(0 if scp(p0, p1) < tr else scp(p0, p1))
print(0 if scp(p0, p2) < tr else scp(p0, p2))
print(0 if scp(p0, p3) < tr else scp(p0, p3))
print(0 if scp(p1, p2) < tr else scp(p1, p2))
print(0 if scp(p1, p3) < tr else scp(p1, p3))
print(0 if scp(p2, p3) < tr else scp(p2, p3))
```

```
0
0
0
0
0
0
```