oefz $\uparrow$ 6

$$I_n = \int_0^1 x^2 e^x \, dx$$

op $-x$
wrong matlab code gegeven, interpreteer en slecht

$$\begin{cases} I_0 = e-1 \\ I_n = e - n I_{n-1} \quad n = 1,2,3,4,\dots \end{cases}$$

$n = 0 \rightarrow \quad \left[e^x\right]_0^1 = e^1 - e^0 = e-1$

$$I_n = \left[x^n e^x\right]_0^1 - \int_0^1 e^x n \, x^{n-1} \, dx$$

$$= e \, x^n - e - n \, I_{n-1}$$

$\int f \, g' = f \cdot g - \int f' \cdot g$

$f = x^n \quad f' = x^{n-1}$

$g' = e^x \quad g = e^x$

andere oef 2

$$e^x = \sum_{i=0}^{+\infty} \frac{x^i}{i!} = 1 + x + \frac{x^2}{2} + \frac{x^3}{3!} + \cdots$$

fout is $x = 1 \quad \rightarrow$ 0

fout is $x = 3 \quad \rightarrow$ groter

fout wordt groter $\rightarrow$ groter

```
benadering = 1
n = 7
X = 1:n;
for i=1:n
    benadering = benadering + 1/factorial(i);
    fouten(i)=abs(exp(1)-benadering);
    logfouten(i)=log(fouten(i));
end;
scatter(X,logfouten);
```

alles groatte wordt nt dus abs