

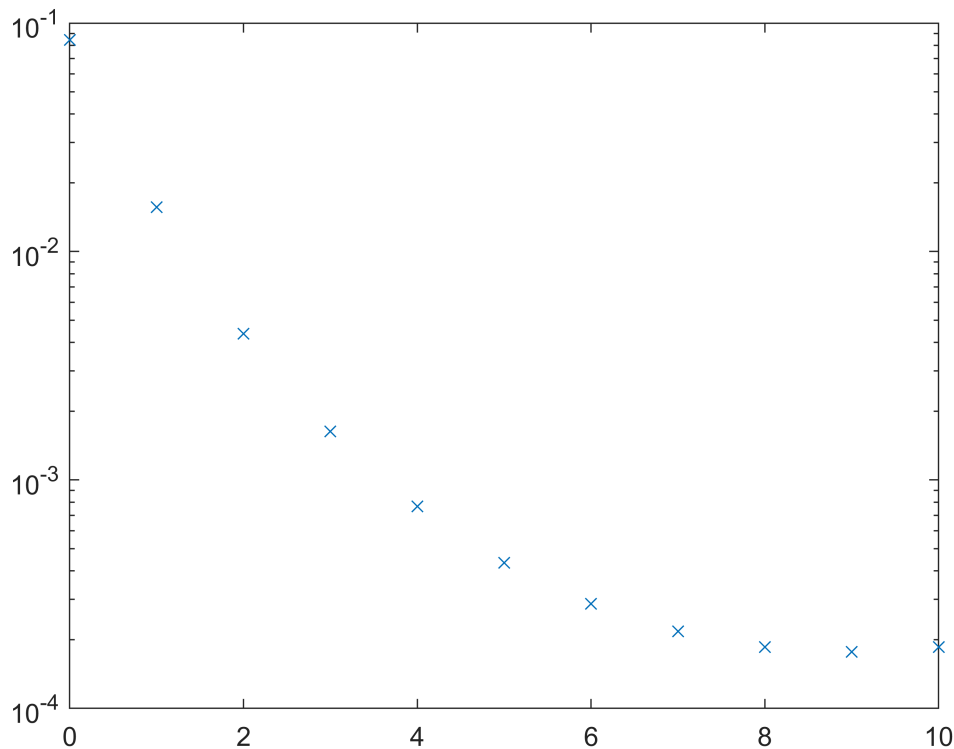
Exercise 3 (c)

(For convenience reasons we have set $x=t$)

Part a) Error

From (a) we have found our error and we will use 'integral' in matlab to plot it

```
epsilon=0.1;
N=0:10;
errora=@(x) exp(-x).*((-epsilon*x).^(N+1))/(1+epsilon*x);
q=integral(errora,0,Inf,'ArrayValued',true);
semilogy(N,abs(q),'x')
```



Part (b) Error Comparison

From (b) we have found our error and we will use 'integral' to plot it

```
for M=1:length(N)
errorb=@(x) exp(-x).*((-epsilon*x).^(N+1)).*((-(1/2)*(epsilon*x-1)).^(M+1))/(1+epsilon*x);
end
z=integral(errorb,0,Inf,"ArrayValued",true);
hold on
semilogy(N,abs(z),'o')
hold off
```

