

Bogdan Chwaliński

Zestaw 7 zadanie 6

```
In[45]:= f[t_] := Cos[ $\frac{1+t}{t^2+0.04}$ ] e-t2;
```

```
In[60]:= Simpson[aa_, bb_, m_] :=  
Module[  
  {a = N[aa], mm = m, b = N[bb], k, , X},  
  Return[ $\frac{b-a}{6} \left( f[a] + f[b] + 4 f\left[\frac{a+b}{2}\right] \right)$ ];  
];
```

```
In[77]:= fdokwadratury[a_, b_, dokladnosc_] :=  
Module[  
  {c},  
  c =  $\frac{a+b}{2}$ ;  
  ab = Simpson[a, b, dokladnosc];  
  ac = Simpson[a, c, dokladnosc];  
  cb = Simpson[c, b, dokladnosc];  
  If[Abs[ab - ac - cb] < dokladnosc,  
    Return[ac + cb],  
    Return[  
      fdokwadratury[a, c,  $\frac{dokladnosc}{2}$ ] + fdokwadratury[c, b,  $\frac{dokladnosc}{2}$ ]  
    ];  
];
```

```
Print["limx→∞f(x)= ", fdokwadratury[-20, 20, 0.00000001]];
```

```
limx→∞f(x)= 0.219612
```