

```
--> kill ( all );
```

done

Alle Einheiten in SI!

```
--> tend : 20 ;
```

20

```
--> R : 10 ;
```

10

```
--> L : 0.1 ;
```

0.1

```
--> C : 0.1 ;
```

0.1

```
--> if L # 0 and C # 0 then f_0 : float ( 1 / ( 2 * %pi ) * 1 / sqrt ( L * C ) );
```

1.591549430918954

```
--> f : 1 ;
```

1

```
--> omega : float ( 2 * %pi * f );
```

6.283185307179586

```
--> U_GS : 0 ;
```

0

```
--> U_0 : 1. ;
```

1

```
--> U : U_GS + U_0 * sin ( omega * t );
```

$\sin(6.283185307179586t)$

```
--> if L # 0 then block (
  if C # 0 then block (
    dgl : L * ' diff ( Q , t , 2 ) + R * ' diff ( Q , t ) + 1 / C * Q = U ,
    loesdgl : ode2 ( dgl , Q , t ) ,
    Q : rhs ( ic2 ( loesdgl , t = 0 , Q = 0 , ' diff ( Q , t ) = 0 ) ) ,
    display ( 1 )
  )
else
```

```

block (
  dgl : L · ' diff ( Q , t , 2 ) + R · ' diff ( Q , t ) = U ,
  loesdgl : ode2 ( dgl , Q , t ) ,
  Q : rhs ( ic2 ( loesdgl , t = 0 , Q = 0 , ' diff ( Q , t ) = 0 ) ) ,
  display ( 2 )
)
)
else
block (
  if C # 0 then block (
    if R # 0 then block (
      dgl : R · ' diff ( Q , t ) + 1 / C · Q = U ,
      loesdgl : ode2 ( dgl , Q , t ) ,
      Q : rhs ( ic1 ( loesdgl , t = 0 , Q = 0 ) ) ,
      display ( 3 )
    )
    else
      block (
        Q : C · U ,
        display ( 4 )
      )
    )
  )
  else
    block (
      dgl : R · ' diff ( Q , t ) = U ,
      loesdgl : ode2 ( dgl , Q , t ) ,
      Q : rhs ( ic1 ( loesdgl , t = 0 , Q = 0 ) ) ,
      display ( 5 )
    )
  )
);

```

%default: replaced 6.283185307179586 by $80143857/12755291 = 6.283185307179585$

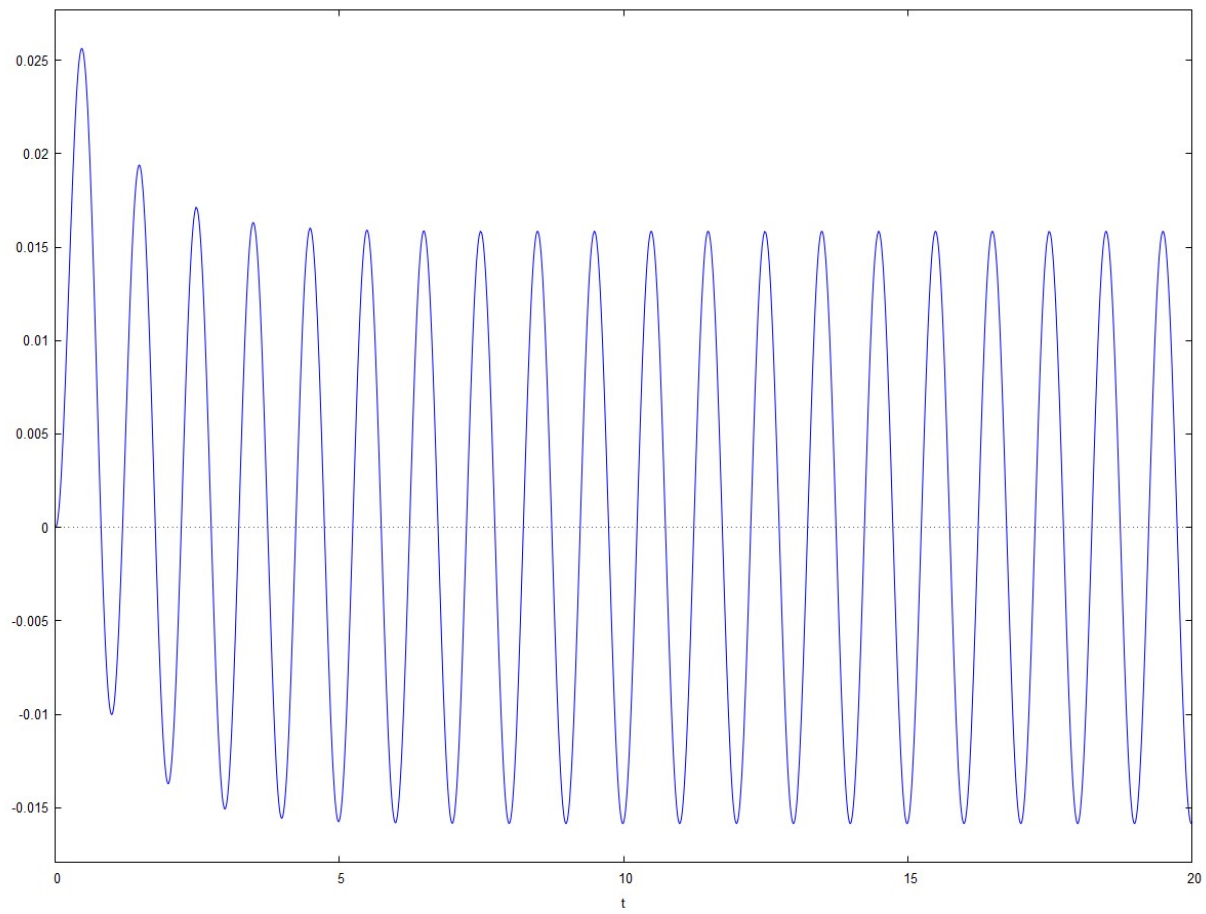
%default: replaced 10.0 by $10/1 = 10.0$

%default: replaced 0.1 by $1/10 = 0.1$

1 = 1

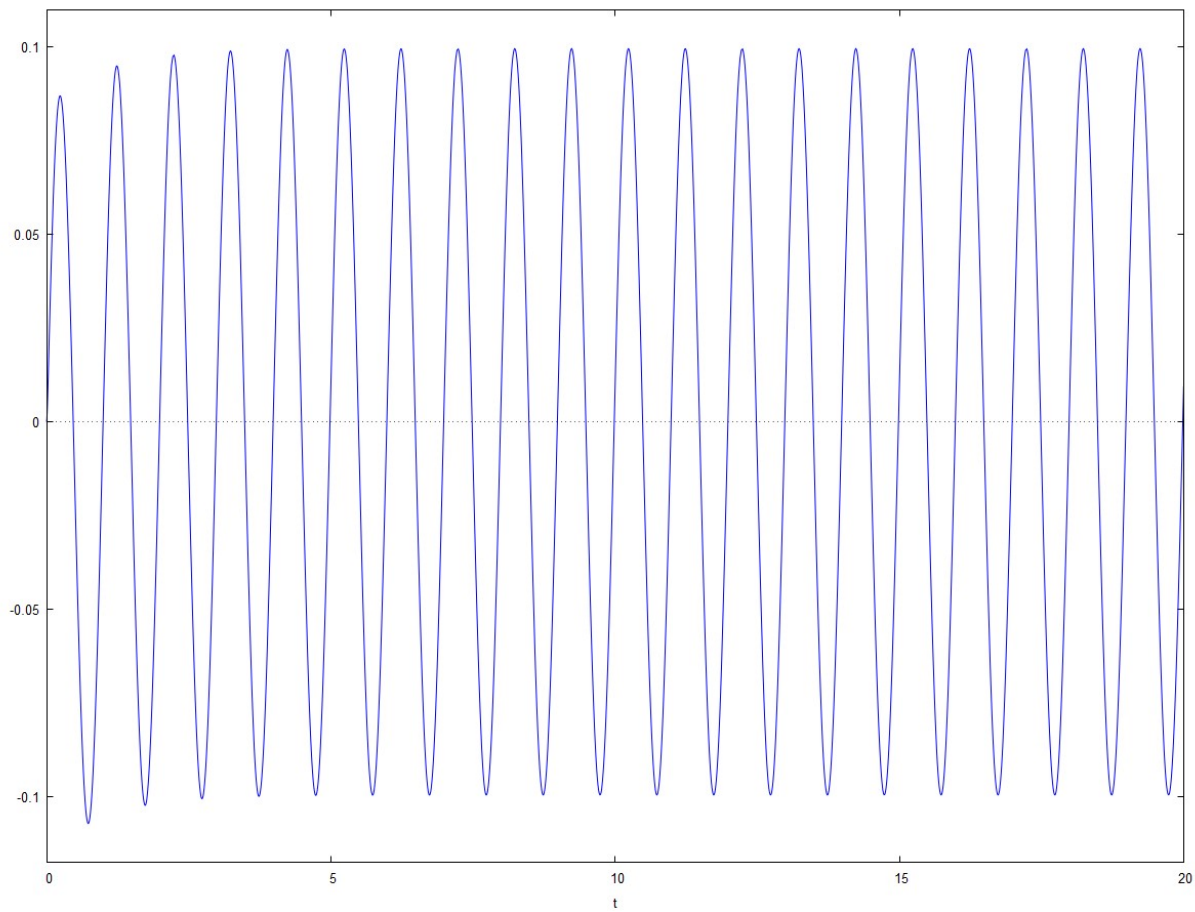
done

--> wxplot2d (Q , [t , 0 , tend]) \$

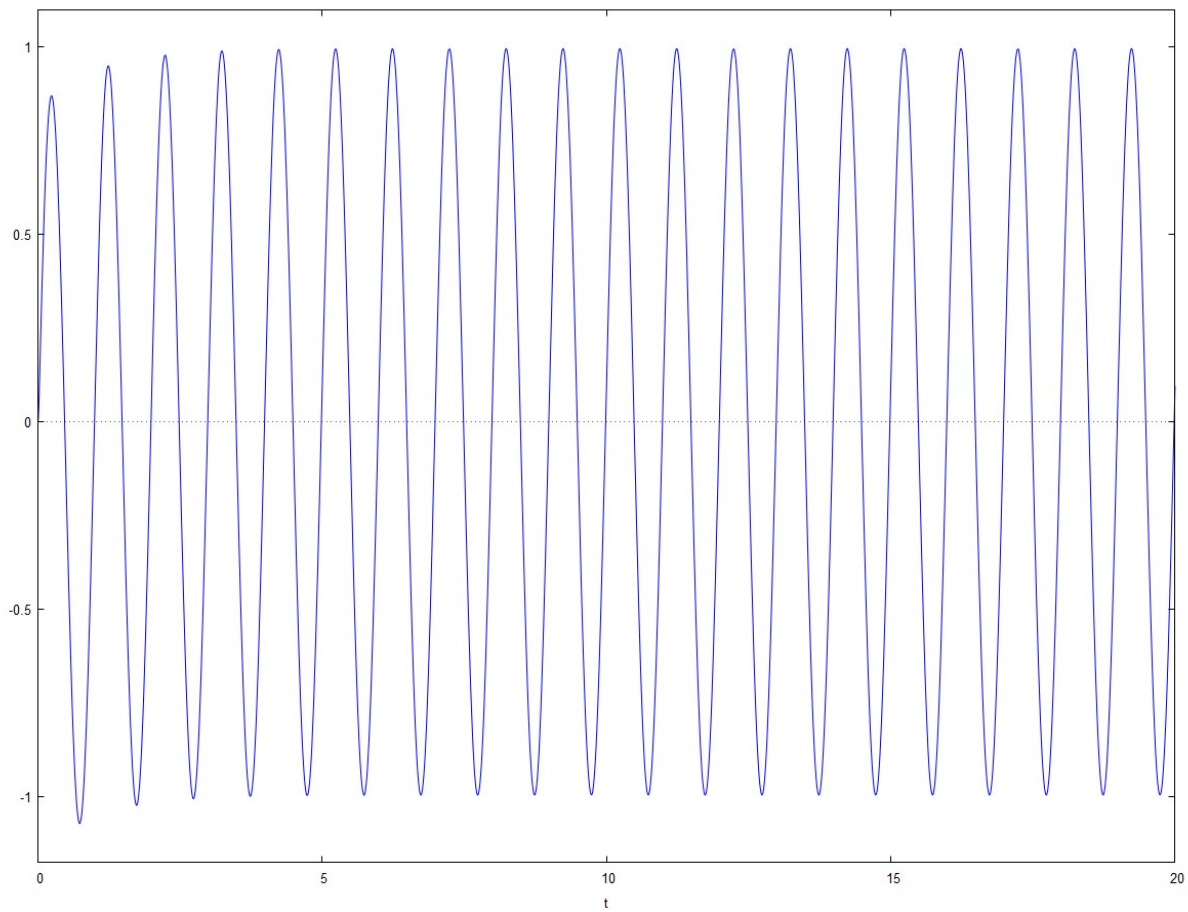


```
--> I : float ( diff ( Q , t ) ) $
```

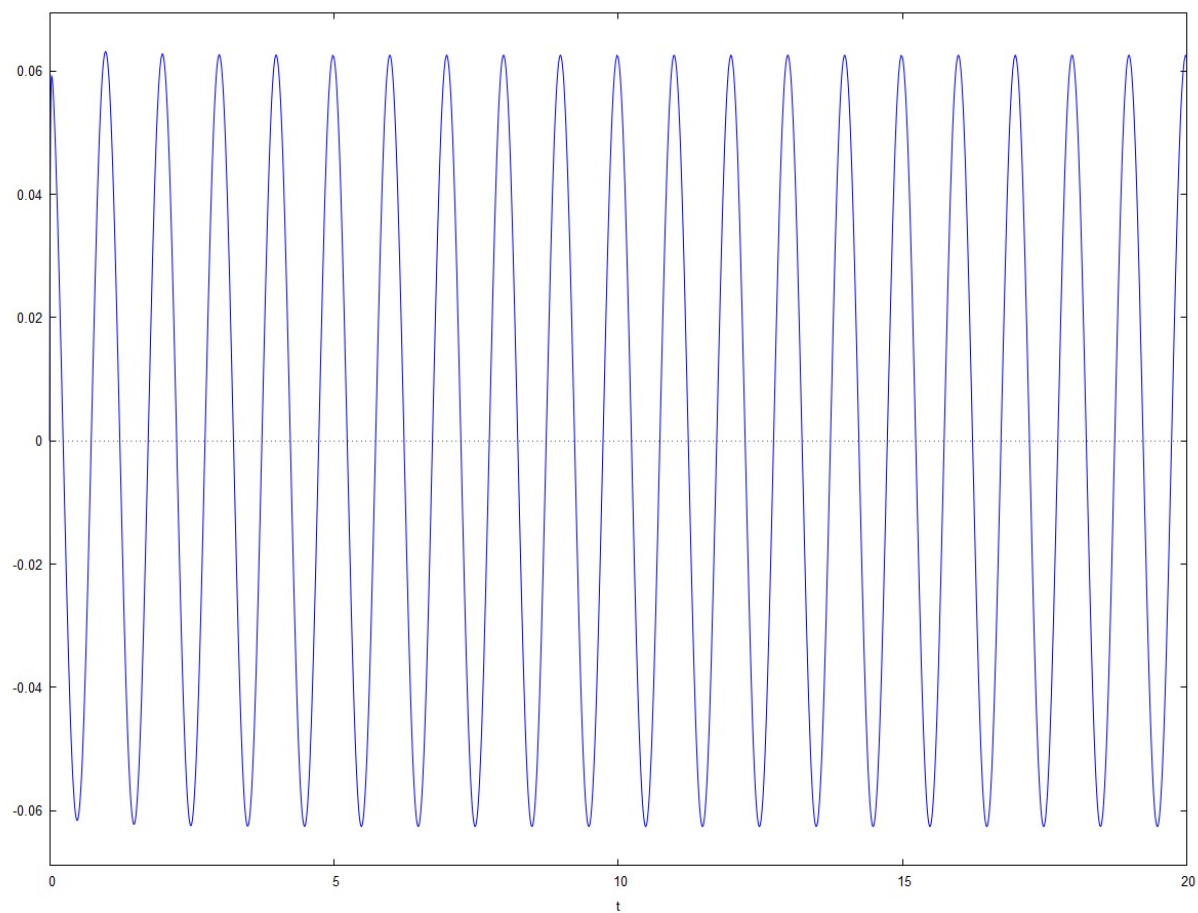
```
--> wxplot2d ( I , [ t , 0 , tend ] ) $
```



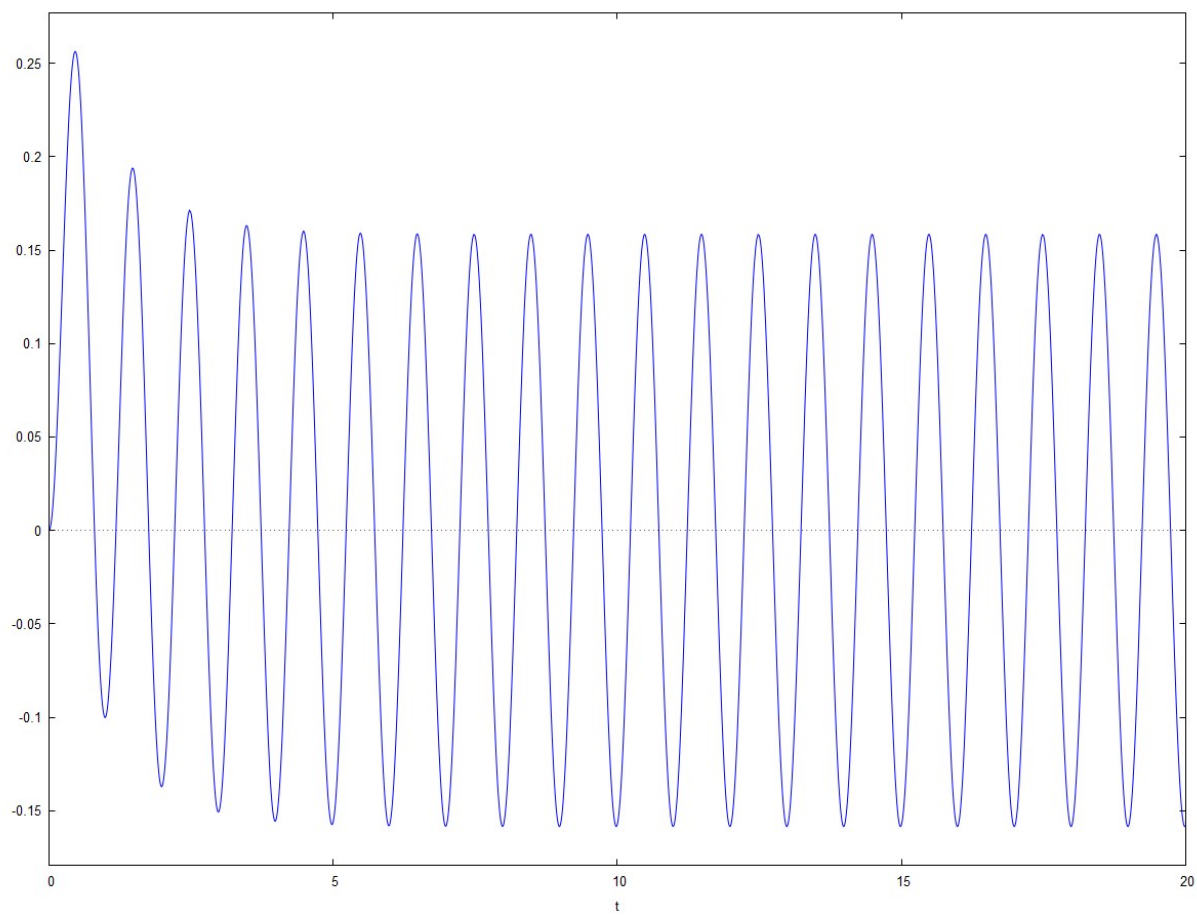
```
--> if R # 0 then block (  
    UR : I · R ,  
    wxplot2d ( UR , [ t , 0 , tend ] )  
)  
else UR : 0 ;
```



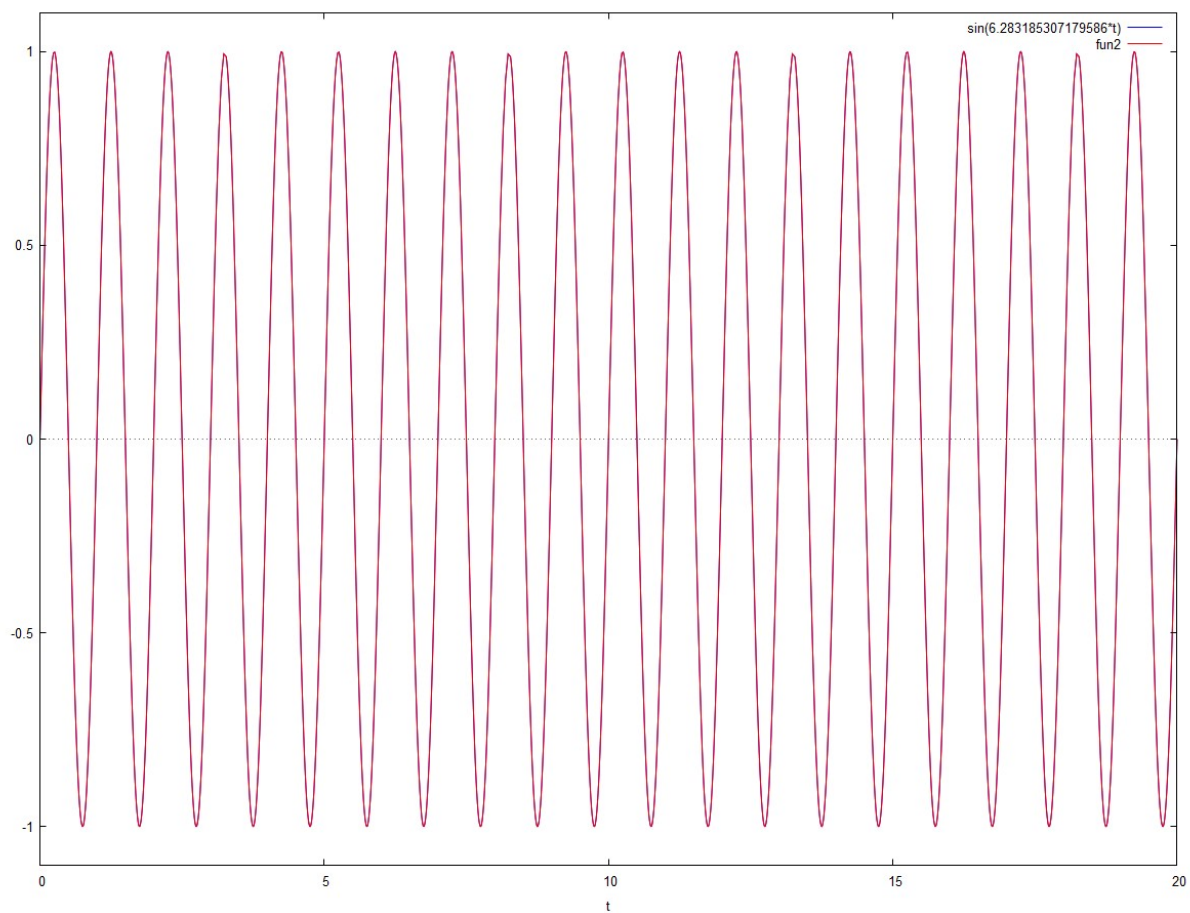
```
--> if L # 0 then block (  
  UL : L · diff ( I , t ) ,  
  wxplot2d ( UL , [ t , 0 , tend ] )  
)  
else UL : 0 ;
```



```
--> if C # 0 then block (  
  UC : U_GS + 1 / C · integrate ( I , t ) ,  
  wxplot2d ( UC , [ t , 0 , tend ] )  
)  
else UC : 0 ;
```



```
--> /*if C#0 then U_Kontrolle:U_GS+UR+UL+UC  
    else*/ U_Kontrolle : UR + UL + UC $  
wxplot2d ([ U , U_Kontrolle ] , [ t , 0 , tend ] ) $
```



Created with [wxMaxima](#).

The source of this Maxima session can be downloaded [here](#).