

```

[ > restart:
[ > fakultaet:=proc(n)
    if n=1 then
        1;
    else
        n*procname(n-1);
    end if;
end proc;
    fakultaet := proc(n) if n = 1 then 1 else n*procname(n - 1) end if end proc
[ > fakultaet(1);
    1
[ > fakultaet(2);
    2
[ > fakultaet(3);
    6
[ > fakultaet(10);
    3628800
[ > 10!;
    3628800
[ > fakultaet(1000);
40238726007709377354370243392300398571937486421071463254379991042993851\
23986290205920442084869694048004799886101971960586316668729948085589013\
23829669944590997424504087073759918823627727188732519779505950995276120\
87497546249704360141827809464649629105639388743788648733711918104582578\
36478499770124766328898359557354325131853239584630755574091142624174743\
49347553428646576611667797396668820291207379143853719588249808126867838\
37455973174613608537953452422158659320192809087829730843139284440328123\
15586110369768013573042161687476096758713483120254785893207671691324484\
26236131412508780208000261683151027341827977704784635868170164365024153\
69139828126481021309276124489635992870511496497541990934222156683257208\
08213331861168115536158365469840467089756029009505376164758477284218896\
79646244945160765353408198901385442487984959953319101723355556602139450\
39973628075013783761530712776192684903435262520001588853514733161170210\
39681759215109077880193931781141945452572238655414610628921879602238389\
71476088506276862967146674697562911234082439208160153780889893964518263\
24367161676217916890977991190375403127462228998800519544441428201218736\
17459926429565817466283029555702990243241531816172104658320367869061172\
60158783520751516284225540265170483304226143974286933061690897968482590\
12545832716822645806652676995865268227280707578139185817888965220816434\
83448259932660433676601769996128318607883861502794659551311565520360939\
88180612138558600301435694527224206344631797460594682573103790084024432\
43846565724501440282188525247093519062092902313649327349756551395872055\
96542287497740114133469627154228458623773875382304838656889764619273838\

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    end do;
    p;
end proc;
Warning, 'i' is implicitly declared local to procedure 'f2'

    f2 := proc(n) local p, i; p := 1; for i from 2 to n do p := p*i end do; p end proc
> f2(5);
                                120
> p;
                                p
> restart:
> v:=proc(n)
    if n<3 then
        1;
    else
        procname(n-2)+procname(n-3);
    end if;
end proc:
> for i to 10 do
    i,v(i);
end do;
                                1, 1
                                2, 1
                                3, 2
                                4, 2
                                5, 3
                                6, 4
                                7, 5
                                8, 7
                                9, 9
                                10, 12
> v(30);
                                3329
> v(40);
                                55405
> v(50);
                                922111
> v2:=proc(n)
    local w1,w2,w3;
    if n<3 then
        return 1;
    end if;
    w1:=1; w2:=1; w3:=1;
    from 3 to n do
        w1,w2,w3:=w2+w3,w1,w2;
    end do;
    w1;
end proc:
> v2(20),v(20);

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```

[                                     200, 200
[ > st:=time():
[   v2(40):
[   time()-st;
[                                     0.
[ > st:=time():
[   v(40):
[   time()-st;
[                                     1.110
[ > v3:=proc(n)
[   option remember;
[   if n<3 then
[     1;
[   else
[     procname(n-2)+procname(n-3);
[   end if;
[ end proc:
[ > st:=time():
[   v3(40);
[   time()-st;
[                                     55405
[                                     0.
[ > op(4,op(v3));
[ table([0 = 1, 1 = 1, 2 = 1, 3 = 2, 4 = 2, 5 = 3, 6 = 4, 7 = 5, 8 = 7, 9 = 9, 10 = 12, 11 = 16, 12 = 21,
[   13 = 28, 14 = 37, 15 = 49, 16 = 65, 17 = 86, 18 = 114, 19 = 151, 20 = 200, 21 = 265, 22 = 351,
[   23 = 465, 24 = 616, 25 = 816, 26 = 1081, 27 = 1432, 28 = 1897, 29 = 2513, 30 = 3329,
[   31 = 4410, 32 = 5842, 33 = 7739, 34 = 10252, 35 = 13581, 36 = 17991, 37 = 23833, 38 = 31572
[   ,
[   40 = 55405
[   ])
[ > forget(v3); # vergiss Erinnerung
[ > op(4,op(v3));
[ > print(v3);
[ proc(n)
[ option remember;
[   if n < 3 then 1 else procname(n-2)+procname(n-3) end if
[ end proc
[ > v3(10000):=x;
[                                     v3(10000):=x
[ > op(4,op(v3));
[                                     table([10000 = x])
[ > print(v3);
[ proc(n)
[ option remember;
[   if n < 3 then 1 else procname(n-2)+procname(n-3) end if
[ end proc

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```
> v3(9999);  
Error, (in v3) too many levels of recursion
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```
> for n to 100 do  
  evalf(v3(n)/v3(n-1));  
end do;
```

```
1.  
1.  
2.  
1.  
1.500000000  
1.333333333  
1.250000000  
1.400000000  
1.285714286  
1.333333333  
1.333333333  
1.312500000  
1.333333333  
1.321428571  
1.324324324  
1.326530612  
1.323076923  
1.325581395  
1.324561404  
1.324503311  
1.325000000  
1.324528302  
1.324786325  
1.324731183  
1.324675325  
1.324754902  
1.324699352  
1.324720670  
1.324723247  
1.324711500  
1.324722139  
1.324716553  
1.324717562  
1.324718956  
1.324717128  
1.324718357
```





```
78806263373739350314495432379066596147300386633518934691065440929718134\  
4146079198452509753159292532335746449083329395577789117599
```

```
[ > evalf(%);
```

```
0.4626451626 10-182
```

```
[ >
```

```
[ >
```