```
> restart;
>
> # FACTORIAL:
>
> ?factorial;
>
> factorial1:=proc(n::nonnegint)
  local f,i;
  if n=0 then
    RETURN(1);
  else
    f:=1:
    for i from 2 to n do
      f:=f*i:
    od;
    RETURN(f);
  fi;
  end:
>
> tt:=time(): factorial(5000): st:=time()-tt;
```

$$st := .063$$

```
>
> tt1:=time(): factorial1(5000): st1:=time()-tt1;
```

$$st1 := .281$$

```
>
```

Probar con el factorial de 10000, 20000, 40000:

```
> tt:=time(): factorial(10000): st:=time()-tt;
```

$$st := .031$$

```
>
> tt1:=time(): factorial1(10000): st1:=time()-tt1;
```

$$st1 := 1.204$$

```
>
> tt:=time(): factorial(20000): st:=time()-tt;
```

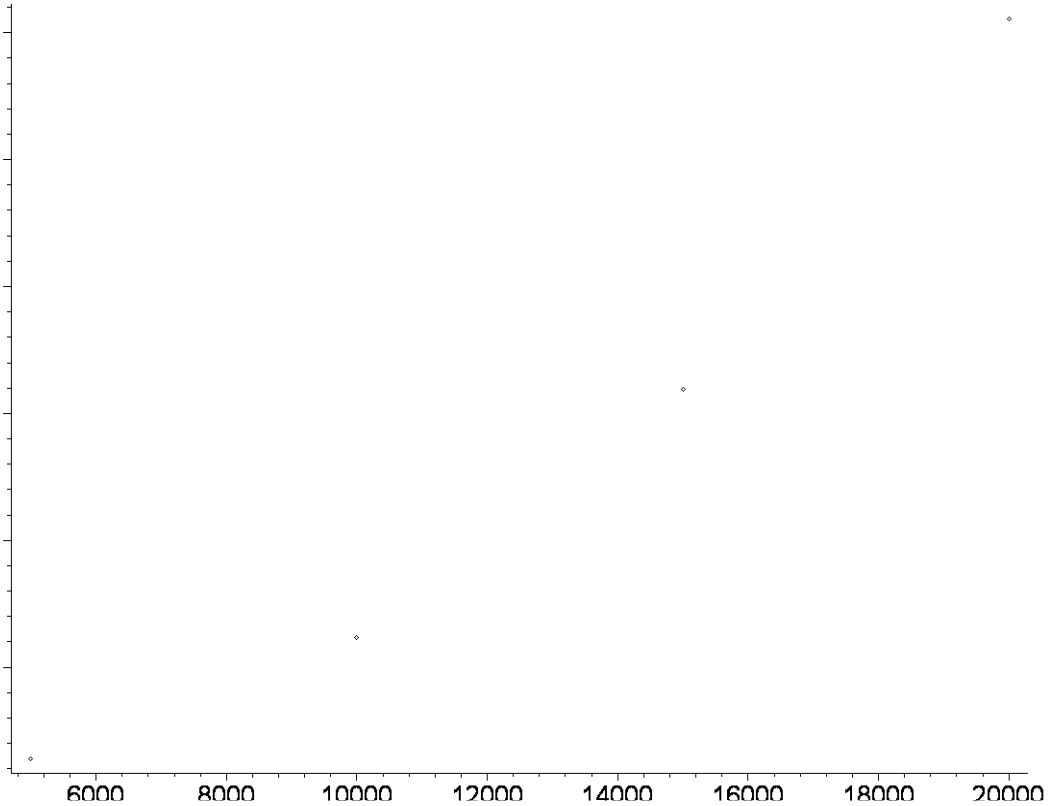
$$st := .125$$

```
>
> tt1:=time(): factorial1(20000): st1:=time()-tt1;
```

$$st1 := 6.109$$

```
>
> tt:=time(): factorial(40000): st:=time()-tt;
>
> tt1:=time(): factorial1(40000): st1:=time()-tt1;
>
> datosgrafica:=[]:
  for i from 5000 by 5000 to 20000 do
   tt1:=time(): factorial1(i): st1:=time()-tt1;
```

```
    datosgrafica:=[op(datosgrafica),[i,st1]]:
  od:
  plots[pointplot](datosgrafica);
```




```
> ?
> # FACTORIAL:
  factorial:=proc(n::nonnegint)
  if n=0 then
    RETURN(1);
  else
    RETURN(n*factorial(n-1));
  fi;
  end:
>
>
```