```
> restart;
  p := prevprime(2^30);
```

$$p := 1073741789$$

```
> R := rand(p):
> d := 100;
```

$$d := 100$$

```
> f := 1:
  for i to d do
      alpha := R();
      while Rem(f,x-alpha,x) mod p = 0 do alpha := R() od;
      f := Expand( f*(x-alpha) ) mod p;
  od:
> N := 10000;
  F := Array(0..d):
  to N do
     alpha := R();
     g := Gcd( f, (Powmod(x-alpha,(p-1)/2,f,x) mod p) - 1 ) mod p:
     deg := degree(g);
     F[deg] := F[deg] + 1;
  od:
```

$$N := 10000$$

```
> convert(F[30..50],list);
```

$$[0, 0, 2, 6, 7, 6, 18, 18, 44, 76, 100, 162, 244, 311, 418, 487, 578, 685, 735, 765, 744]$$

```
> data := [seq( i$F[i], i=0..d )]:
> dataplot(data,histogram,discrete,view=[30..70,default],thickness=5)
  ;
```