1
```
restart;maple_mode(1);cas_setup(0,0,0,1,0,1e-10,10,[1,50,0,25],0,0,0); #radians,pas de cmplx, pas de  Sqrt
```
Menu

2
```
a priori il faudra degree(P)-degree(Q)+1 divisions par le coeff dominant de Q,
ce qui explique le coefficient multiplicateur.
```

3
```
pseudiv:=(P,Q)->rem(lcoeff(Q)^(max(degree(P)-degree(Q)+1,0))*P,Q);
```
```
// Success
// End defining pseudiv
```
$$(P, Q) \to \mathrm{rem}(\mathrm{lcoeff}(Q)^{\max(\deg(P)-\deg(Q)+1,0)} \cdot P, Q)$$
Menu

4

5 Prog Edit Add | nxt | OK | Save
```
eucl1:= proc(P,Q)
local  R1,R2,R3;
R1:=P;R2:=Q;
while (R2 <>0)  do R3:=pseudiv(R1,R2);
print(R1);
R1:=R2;R2:=R3; od;
R1;
end;
```
```
// Warning: pseudiv  declared as global variable(s)
// End defining eucl1
```
```
proc(P,Q)
  local R1,R2,R3;
  R1:=P;
  R2:=Q;
  while R2<>0 do
    R3:=pseudiv(R1,R2);
    print(R1);
    R1:=R2;
    R2:=R3;
   od;;
  R1;

end;
```
Menu

6
```
P:=(x+1)^7-(x-1)^6;
```
$$(x+1)^7 - (x-1)^6$$
Menu

7
```
eucl1(P,diff(P,x));
```
```
R1:(x+1)^7-(x-1)^6
R1:7*(x+1)^6-6*(x-1)^5
R1:162*x^5-390*x^4+1060*x^3-780*x^2+474*x-78
R1:5680080*x^4-6091680*x^3+10471104*x^2-3655008*x+1009008
R1:17080988542248960*x^3-8939656659548160*x^2+9874611277977600*x-1277093808506880
R1:162075181838736178940176642083536240640 0*x^2-41642078824615613851890859650192506880 0*x+2263
R1:166010805992791100529088393026156904505806262568821954773990647948234674161684317669949440
```

553348585108130006595522331961554766783572539742997424282150102363979721965873176750223380733

Menu

8

9 Prog Edit Add nxt OK Save

```
subpgcd:= proc(P,Q)
local R1,R2,R3,g,d,delta,p,q;
p:=content(P);q:=content(Q);d:=igcd(p,q);
if degree(P)< degree(Q)
then R1:=normal(Q/q);R2:=normal(P/p);
else R1:=normal(P/p);R2:=normal(Q/q);
 fi;
 R3:=pseudiv(R1,R2);delta:=degree(R1)-degree(R2);
h:=1;g:=1;
 while degree(R3)>0  do
print(R1);
 R1:=R2; R2:=normal(R3/g/h^delta);
 g:=lcoeff(R1);h:=g^delta/h^(delta-1);
 R3:=pseudiv(R1,R2);delta:=degree(R1)-degree(R2);
 od;
 if R3==0  then normal(d*R2/content(R2))   else d fi;
 end:
```

```
// Warning: pseudiv h  declared as global variable(s)
// End defining subpgcd
```

Done Menu

10 subpgcd(P,diff(P,x));

```
R1:x^7+6*x^6+27*x^5+20*x^4+55*x^3+6*x^2+13*x
R1:7*x^6+36*x^5+135*x^4+80*x^3+165*x^2+12*x+13
R1:162*x^5-390*x^4+1060*x^3-780*x^2+474*x-78
R1:115920*x^4-124320*x^3+213696*x^2-74592*x+20592
R1:271075840*x^3-141872640*x^2+156710400*x-20267520
```

11