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> restart;
with(LinearAlgebra):
Right := proc(m::posint, n::posint)

local M0:= <<1>>, M1:= <<0>>, M2:= <<0>>, i, B;
global T, G;
local m0:= <<0>>, m1:= <<1>>, m2:= <<0>>, A;

for i to n do
local Z:= Matrix(2^(i-1)$2, 0);
(M2, M1, M0):= (<y*M0, Z; Z, Z>, <M2, x*M0; M0, Z>, <M1+M2, x*M0;
M0, Z>)
od;

for i to n do
local z:= Matrix(2^(i-1)$2, 0);
(m2, m1, m0):= (<y*m0, z; z, z>, <m2, x*m0; m0, z>, <m1+m2, x*m0;
m0, z>)
od;

A:= (M0+m0):
B:= (A)^m:
T:= simplify(B[1, 1])
end proc;

F := proc(P)
local temp, mindeg;
temp := select(term->member (degree(term,[x])-degree(term,[y]),
[0,1]), [op(p)]); mindeg := min(map(degree,temp,[x,y])); select
(term->degree(term,[x,y])=mindeg, temp);
end proc;
Right := proc(m::posint, n::posint)
local M0, M1, M2, i, B, m0, m1, m2, A, Z, z;
global T, G;
M0 := < < 1 > >;
M1 := < < 0 > >;
M2 := < < 0 > >;
m0 := < < 0 > >;
m1 := < < 1 > >;
m2 := < < 0 > >;
for i to n do
Z := Matrix(2^(i-1)$2, 0);
M2, M1, M0 := < < y*M0|Z >, < Z|Z >, < < M2|x*M0 >, < M0
|Z > >, < < M1 + M2|x*M0 >, < M0|Z > >
end do;
for i to n do
z := Matrix(2^(i-1)$2, 0);
m2, m1, m0 := < < y*m0|z >, < z|z >, < < m2|x*m0 >, < m0|z > >,
< < m1 + m2|x*m0 >, < m0|z > >
end do;

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A := M0 + m0;
B := A^m;
T := simplify(B[1, 1])

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end proc

F := proc(P)

local temp, mindeg;

temp := select(term → member(degree(term, [x]) - degree(term, [y]), [0, 1]), [op(p)]);

mindeg := min(map(degree, temp, [x, y]));

select(term → degree(term, [x, y]) = mindeg, temp)

end proc

>

>

> G := select(T → abs(degree(T, x) - degree(T, y)) < 2, expand(Right(3, 6)));

F(G, [x, y]);

$$G := 20x^4y^5 + 180y^4x^4 + 244y^3x^4 + 508y^4x^3 + 100y^3x^3 + 44y^2x^3 + 2y^3x^2$$

[p]

(2)

> G := select(T → abs(degree(T, x) - degree(T, y)) < 2, expand(Right(3, 10)));

F(G, [x, y]);

$$G := 144x^8y^7 + 3520x^7y^7 + 30944y^6x^7 + 27680y^7x^6 + 74492y^6x^6 + 40298y^5x^6$$

$$+ 57612y^6x^5 + 12180y^5x^5 + 1148y^4x^5 + 908y^5x^4$$

[p]

(3)

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