```
> #1;
  #The number of females born at n=4 => p1·c2+p2·c1+p3·c0+p2·c2+p3·c1;
> #2;
  R3 := proc(n, p1, p2, p3, c0, c1, c2) option remember :
  if n = 0 then
  c0 ;
  elif n = 1 then
  c1;
  elif n = 2 then
  c2;
  else
  expand(p1·R3(n − 1, p1, p2, p3, c0, c1, c2) + p2·R3(n − 2, p1, p2, p3, c0, c1, c2) + p3·R3(n
      − 3, p1, p2, p3, c0, c1, c2)) :
  fi:
  end:
  seq(R3(n, 1, 1, 1, 1, 1, 1), n = 1 ..4); # output for n=4;

  #3
  #Extinction: When total probablity: p1+p2+p3 < 1:
   seq(R3(n, 0.3, 0.3, 0.3, 1, 1, 1), n = 1000);

  #Stable Population: When probability: p1+p2+p3=1:
   seq(R3(n, 0.4, 0.3, 0.3, 1, 1, 1), n = 1000);

  #Population Expolsion: When probability: p1+p2+p3>1:
  seq(R3(n, 0.5, 0.5, 0.5, 1, 1, 1), n = 1000);
```

$$1, 1, 3, 5$$

$$2.232967122\ 10^{-23}$$

$$1.000000000$$

$$1.276032977\ 10^{91} \qquad \textbf{(1)}$$

```
>
```