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LAMPIRAN

- **Kata Fibonacci**

Untuk setiap *n* > 1, hasil morfisma $\varphi^n(a)$ membentuk subkata berhingga yang merupakan bagian awal dari kata (tak hingga) Fibonacci. Berikut sebuah contoh subkata untuk $n = 12$.

*"abaababaabaababaababaabaababaabaababaababaabaababaababaabaababaab
aababaababaabaababaabaababaababaabaababaababaabaababaabaababaababa
abaababaababaabaababaabaababaababaabaababaabaababaababaabaababaaba
baabaababaabaababaababaabaababaabaababaababaabaababaabaababaababaa
baababaababaabaababaababaabaababaabaababaababaabaababaabaababaabab
aabaababaababaabaababaabaababaababaabaababaababa"*

- **Posisi-*P* Permainan Wythoff**

1.[1, 2];	2.[3, 5];	3.[4, 7];
4.[6, 10];	5.[8, 13];	6.[9, 15];
7.[11, 18];	8.[12, 20];	9.[14, 23];
10.[16, 26];	11.[17, 28];	12.[19, 31];
13.[21, 34];	14.[22, 36];	15.[24, 39];
16.[25, 41];	17.[27, 44];	18.[29, 47];
19.[30, 49];	20.[32, 52];	21.[33, 54];
22.[35, 57];	23.[37, 60];	24.[38, 62];
25.[40, 65];	26.[42, 68];	27.[43, 70];
28.[45, 73];	29.[46, 75];	30.[48, 78];
31.[50, 81];	32.[51, 83];	33.[53, 86];

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34.[ 55, 89];    35.[ 56, 91];    36.[ 58, 94];
37.[ 59, 96];    38.[ 61, 99];    39.[ 63,102];
40.[ 64,104];    41.[ 66,107];    42.[ 67,109];
43.[ 69,112];    44.[ 71,115];    45.[ 72,117];
46.[ 74,120];    47.[ 76,123];    48.[ 77,125];
49.[ 79,128];    50.[ 80,130];    51.[ 82,133];
52.[ 84,136];    53.[ 85,138];    54.[ 87,141];
55.[ 88,143];    56.[ 90,146];    57.[ 92,149];
58.[ 93,151];    59.[ 95,154];    60.[ 97,157];
61.[ 98,159];    62.[100,162];    63.[101,164];
64.[103,167];    65.[105,170];    66.[106,172];
67.[108,175];    68.[110,178];    69.[111,180];
70.[113,183];    71.[114,185];    72.[116,188];
73.[118,191];    74.[119,193];    75.[121,196];
76.[122,198];    77.[124,201];    78.[126,204];
79.[127,206];    80.[129,209];    81.[131,212];
82.[132,214];    83.[134,217];    84.[135,219];
85.[137,222];    86.[139,225];    87.[140,227];
88.[142,230];    89.[144,233];    90.[145,235];
91.[147,238];    92.[148,240];    93.[150,243];
94.[152,246];    95.[153,248];    96.[155,251];
97.[156,253];    98.[158,256];    99.[160,259];
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100.[161,261]; 101.[163,264]; 102.[165,267];

103.[166,269]; 104.[168,272]; 105.[169,274];

106.[171,277]; 107.[173,280]; 108.[174,282];

109.[176,285]; 110.[177,287]; 111.[179,290];

112.[181,293]; 113.[182,295]; 114.[184,298];

115.[186,301]; 116.[187,303]; 117.[189,306];

118.[190,308]; 119.[192,311]; 120.[194,314];

121.[195,316]; 122.[197,319]; 123.[199,322];

124.[200,324]; 125.[202,327]; 126.[203,329];

127.[205,332]; 128.[207,335]; 129.[208,337];

130.[210,340]; 131.[211,342]; 132.[213,345];

133.[215,348]; 134.[216,350]; 135.[218,353];

136.[220,356]; 137.[221,358]; 138.[223,361];

139.[224,363]; 140.[226,366]; 141.[228,369];

142.[229,371]; 143.[231,374]; 144.[232,376];

145.[234,379]; 146.[236,382]; 147.[237,384];

148.[239,387]; 149.[241,390]; 150.[242,392];

151.[244,395]; 152.[245,397]; 153.[247,400];

154.[249,403]; 155.[250,405]; 156.[252,408];

157.[254,411]; 158.[255,413]; 159.[257,416];

160.[258,418]; 161.[260,421]; 162.[262,424];

163.[263,426]; 164.[265,429]; 165.[266,431];

166.[268,434]; 167.[270,437]; 168.[271,439];

169.[273,442]; 170.[275,445]; 171.[276,447];

172.[278,450]; 173.[279,452]; 174.[281,455];

175.[283,458]; 176.[284,460]; 177.[286,463];

178.[288,466]; 179.[289,468]; 180.[291,471];

181.[292,473]; 182.[294,476]; 183.[296,479];

184.[297,481]; 185.[299,484]; 186.[300,486];

187.[302,489]; 188.[304,492]; 189.[305,494];

190.[307,497]; 191.[309,500]; 192.[310,502];

193.[312,505]; 194.[313,507]; 195.[315,510];

196.[317,513]; 197.[318,515]; 198.[320,518];

199.[321,520]; 200.[323,523]; 201.[325,526];

202.[326,528]; 203.[328,531]; 204.[330,534];

205.[331,536]; 206.[333,539]; 207.[334,541];

208.[336,544]; 209.[338,547]; 210.[339,549];

211.[341,552]; 212.[343,555]; 213.[344,557];

214.[346,560]; 215.[347,562]; 216.[349,565];

217.[351,568]; 218.[352,570]; 219.[354,573];

220.[355,575]; 221.[357,578]; 222.[359,581];

223.[360,583]; 224.[362,586]; 225.[364,589];

226.[365,591]; 227.[367,594]; 228.[368,596];

229.[370,599]; 230.[372,602]; 231.[373,604];

232.[375,607];

- **Program Konstruksi Posisi-*P* (dari subkata Fibonacci dengan *n* = 12)**

```
Morfism2 := proc(s :: string) local Awal, L, i, x; global IndeksA,
      IndeksB;
x := s :
IndeksA := 0;
IndeksB := 0 :
L := length(x);
Awal := 1 :
for i from Awal to 2·L do
if x[i] = "a" then IndeksB := IndeksB + 1 :
     #Kasus 1: posisi ke-i di dalam Kata adalah karakter s = a
x := Insert(x, i, "b");
i := i + 1 : L := L + 1;
elif x[i] = "b" then
     #Kasus 2: posisi ke-i di dalam Kata adalah karakter s = b
x := Insert(x, i, "a") :
x := Delete(x, i ..i);
IndeksA := L − IndeksB :
end if:
end do:
eval(x) :
end proc:
```

```
FibWord := proc(s :: string, n) local x, i :
 x := s :
for i from 1 to n do
x := Morfism2(x) :
 end do:
eval(x);
end proc:
```

```
with(LinearAlgebra) :
FibArray := proc (W) local i,j,K,M :
M := Matrix(IndeksA, 2, 0) :
     #mendefinisikan matriks nol M berukuran IndeksA x 2
K := length(W); i := 1 : j := 0 :
  while i < IndeksA + 1 do
  if j < K then j := j + 1 :
      if W[j] = "a" then M[i, 1] := j; M[i, 2] := j + i; i := i + 1 : fi :
  else i := IndeksA + 1 : fi: end do;
eval(M) end proc:
```