```
18 -
                                                                                       18 -
                                                                                       17 -
  17 -
                                                                                       16 -
                                                                                                                               15
                                                                                       15 -
  15 -
                                          14
                                                                                                                            14 119
                                                                                       14 -
                                   1 13 104
                                                                                                                      1 13 104 663
                                                                                       13 -
  13 -
                                                                                                                    1 12 90 544 2907
                                 1 12 90 544
  12 -
                                                                                       12 -
                                                                                    (budget)
- 01 9 -
(budget)
                                 11 77 440 2244
                                                                                                                    11 77 440 224410659
  11 -
                                                                                                              1 10 65 350 1700 775233915
                               10 65 350 17007752
  10 -
                                  54 273 1260 550 823 256
                                                                                                                 '9` 54` 273 1260550&32595931
  9 -
                                44 208 910 3808155042016
                                                                                                                  44 208 910 3808155062012645157
                                                                                       8 -
b_t
                             <sup>1</sup>35 154 637 2548999963876049226
                                                                                                                35 154 637 2548999638760492362033
                                                                                                             <sup>1</sup>27 110 429 163861882325672132687255785
                              110 429 1638618823256721306876
                         20 75 275 10013640132648450776563752
                                                                                                           20 75 275 1001364013264845077656375414425
                           48 165 572 2002 70722519904430268171688640
                                                                                                             <sup>1</sup>48 165 572 2002 70722519404430268176884345965
                             90 297 100134321193419910492364838331540
                                                                                                               90 297 1001 34321 1934 1990492 3648 883 1540 0405
                                                                                                        14 42 132 429 1430 48621679 687 8280 80 172 2 920 67 4 9 69 4845
                          42 132 429 1430 48621679687880808077422920674440
                                                                                                          14 42 132 429 1430 48621679687820807229200749694845
                            42 132 429 1430 48621679687820801742920074440
                                ~42 | 132 | 429 |1430|48,621,67968782608,017242,920607444(
                                                                                                                   ~42 | 132 | 429 |1430|4862167968782080174292067496948
                                                                                                       5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
                    6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
                                         t (time)
                                                                                                                              t (time)
                                                                                                        Number of possible paths to achieve b_t given b_0 = 4.
                   Number of possible paths to achieve b_t given b_0 = 3.
  19 -
                                                                                       19 -
  18 -
                                                                                       18 -
                                                                                       17 -
  17 -
  16 -
                                                                                       16 -
                                                                                                                          13 105
                                                                                       15 -
                                     13 105
                                                                                                                   1 12
                                                                                                                            91 560
                                                                                       14 -
  14 -
                                  12' 91' 559
                                                                                                                     11 78 455 2379
                                                                                       13 -
  13 -
                              11 78 454 2363
                                                                                                                 ' 10' 66' 364 18198550
                                                                                       12 -
  12 -
                                                                                    (budget)
- 01 10 -
                                                                                                                     55 286 1364617126961
                             10 66 363 18048415
(budget)
  11 -
                                                                                                                  45 220 1000 43521841 16380
                                55 285 1350605226163
  10 -
                             45 219 987 4248177482675
                                                                                                                36 165 714 298812244941997505
  9 -
                                                                                                             36 164 702 289811696651283141
                                                                                     b_t
                                                                                        8 -
b_t
   8 -
                                                                                                           21 84 329 12744900187681702673520143119
                            119 483 1911744828764104662807
                          83 319 1209 4550170683952396698909
                                                                                                        10 35 125 451 163859802193807522984552064218725
                   15 55 200 726 263996208519029240610260673
                                                                                                         20' 69' 242 858 3068110540052459964889686256050
                10 34 117 407 14305070181215524263643617361457325
                        62 207 704 243185023005160723656639665128865
                                                                                                      10 34 117 407 14305070181218524263641361736145718126522015
                          90 297 1001 3432119341990492364888315400405
                                                                                                        14 48 165 572 2002 70722519490443026817168864346519569567980
                            90 297 10013432119341990492364888315000405
                                                                                                          14 48 165 572 2002 7072251949044302681716884438451956956798
                       Ŷ9 , <sup>1</sup>2,8 , <sup>1</sup>9,0 , 297 ,10,01,34,321,19341,990492864,889315400405
                                                                                                            ___14 _ 48 _ 165 _572 2002 7072251940443026817168844346519569567
       1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
                                                                                          0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
                                         t (time)
                                                                                                                              t (time)
                   Number of possible paths to achieve b_t given b_0 = 5.
                                                                                                        Number of possible paths to achieve b_t given b_0 = 6.
                                                                                       19 -
  19 -
  18 -
                                                                                       18 -
                                                                                                                         13
                                                                                       17 -
  17 -
                                                                                                                   1 12 91
                                                                                       16 -
                              1 12 91
                                                                                                                 1 11 78 455
                                                                                       15 -
  15 -
                                                                                                                 10 66 364 1820
                               11 78 455
                                                                                       14 -
                             10 66 364 1820
                                                                                                                 9' 55' 286 13656188
  13 -
                                                                                       13 -
                                                                                                                  45 220 1001 436818563
                               55 286 13656187
  12 -
                                                                                       12 -
                                                                                     (budget) - 01 9 -
(budget) - 01 - 01 - 01
                                                                                                               . 36 . 165 . 715 3003123750369
                             45 220 1001 436718546
                                                                                                             28
                           36
                              165 715 3002123590217
                                                                                                                 120 495 2002 800731801625780
                                                                                                           21 84 330 1287500419437541292600
                            120 495 2001 799231671124830
                                                                                                       15 56 210 792 3002114243605668269331
                      <sup>1</sup>21 84 330 1286499019317461287945
   8 -
                                                                                        8 -
b_t
                                                                                     b_t
               4 15 56 210 791 2989113242942631550312
                                                                                                      10 35 126 462 171564202417914034673318429
   7 -
            20°70°252°923°341812754780¥7991619029369560
                 ````20```70`` 251` 912`33411231455606921520821358052
 10 35 126 461 170363302363885032323627514319600
 10 35 125 451 163859802193807520984512064218725
 5 21 83 319 1209 455017068 395239666 893397582697035
1 6 27 110 429 1638618823256 721326817825485 1672986
 4 15 55 200 726 26399620351902924061002606533150
5 20 75 275 100136401326484500765637242148297575
 ′ 27′ 110′ 429′ 163861882325672130268173257485116712098645
 1 5 20 75 275 1001 36401 32648450776563754214829$7575
1 5 20 75 275 1001 36401 32648450776563754214829$7575
 <u>.</u> 27 110 429 1638618823256721302681726254861161209864
 1 -
 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
 t (time)
 t (time)
 Number of possible paths to achieve b_t given b_0 = 7.
 Number of possible paths to achieve b_t given b_0 = 8.
 19 -
 19 -
 1 12
 18 -
 18 -
 1 12
 1 11 78
 17 -
 17 -
 1 10 66 364
1 9 55 286 1365
 1 11 78
 16 -
 16 -
 1 10 66 364
9 55 286 1365
 15 -
 15 -
 8 45 220 1001 4368
 14 -
 14 -
 1 7 36 165 715 300312376
6 28 120 495 200280081824
 8 45 220 1001 4368
 13 -
 13 -
 1 7 36 165 715 300312376
6 28 120 495 200280081823
 12 -
 12 -
(budget) - 11 - 9 -
 (budget)
10 -
9 -
 5 21 84 330 12875005194485581
 1 5 21 84 330 12875005194475563
4 15 56 210 792 300311434374067770
 4 15 56 210 792 300311444375767940
 1 4 15 56 210 792 3003114443751767940
1 3 10 35 126 462 17166435243092353352506
 9 -
 1 3 10 35 126 462 1716643424293220351386
2 6 20 70 252 924 343112854846178361698117
 20 70 252 924 34321286986012845663892
 8 -1
 8 -
b_t
 3 10 35 126 462 17166434242992203751383643223
4 15 56 210 792 300211424360566878693234536
 7 -
 21 84 330 1286499019317461287945104280300
6 28 120 494 1088 708019317461287945104280300
 15 56 210 792 300211424360566886932453640
 10 35 126 462 1715 642 02417 914 03946 73318429
 6 -
 15 56 210 791 2989113242941263116520313261548
5 21 84 329 127449001876817026735120143131996700
 5 -
 28 120 494 1988 78883100821125108626668360
 4 -
 4 -
 7 36 164 702 289811696651283141624288806817820
1 8 44 208 910 38081550620126451981480049148667280
1 8 44 208 910 38081550620126451981480049148667280
 6 28 119 483 19117448287641046628061555533885
7 35 154 637 2548999687604923662023873885
1 7 35 154 637 2548999687604923662023873851070
 3 -
 1 -
 ~8 , ~44 , 208 , 910 ,38081,550$2012645,19761,4307049144506,7
 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
```

19 -

Number of possible paths to achieve  $b_t$  given  $b_0 = 2$ .

t (time)

Number of possible paths to achieve  $b_t$  given  $b_0 = 1$ .

t (time)