Lazy Caterer's Sequence

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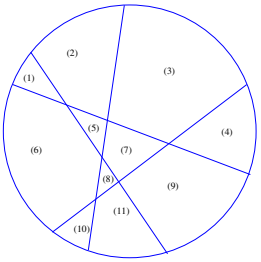
1 Illustration of structures

1.1 Pancake Structure

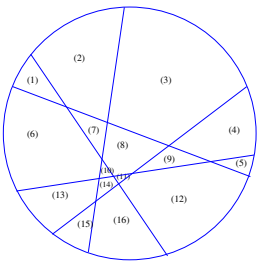
1. $n = 4$

   (a) Pancake structure



2. $n = 4$

   (a) Pancake structure



2 Formula Demonstrations

2.1 Binomial

1. $a(n) = Binomial(n+2,1) - 2 \times Binomial(n+1,1) + Binomial(n+2,2)$

   $\binom{n+2}{1} - 2 \times \binom{n+1}{1} + \binom{n+2}{2}$

   (a) $n = 4$

   $$a(4) = \binom{4+2}{1} - 2 \times \binom{4+1}{1} + \binom{4+2}{2}$$

   $$a(4) = \binom{6}{1} - 2 \times \binom{5}{1} + \binom{6}{2}$$

   $$a(4) = 6 - 10 + 15$$

   $$a(4) = 11$$

   (b) $n = 5$

   $$a(5) = \binom{5+2}{1} - 2 \times \binom{5+1}{1} + \binom{5+2}{2}$$

   $$a(5) = \binom{7}{1} - 2 \times \binom{6}{1} + \binom{7}{2}$$

   $$a(5) = 7 - 12 + 21$$

   $$a(4) = 16$$

2.2 Generating Function

1. $G.f : A(x) = (1 - x + x^2)/(1 - x)^3$

   (a) $n = 4$

   □

   (b) $n = 5$

   □