Lazy Caterer's Sequence

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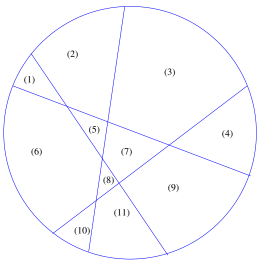
November 15, 2015

0.1 Illustration of structures

1. $n = 4$

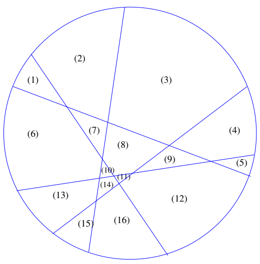
   (a) Pancake structure



   (b) AA

2. $n = 4$

   (a) Pancake structure



   (b) AA

0.2 Formula Demonstrations

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) $n = 4$

   $$\boxed{\begin{gathered} a(4) = \binom{4+2}{1} - 2 \times \binom{4+1}{1} + \binom{4+2}{2} \\ a(4) = \binom{6}{1} - 2 \times \binom{5}{1} + \binom{6}{2} \\ a(4) = 6 - 10 + 15 \\ a(4) = 11 \end{gathered}}$$

   (b) $n = 5$

   $$\boxed{\begin{gathered} a(5) = \binom{5+2}{1} - 2 \times \binom{5+1}{1} + \binom{5+2}{2} \\ a(5) = \binom{7}{1} - 2 \times \binom{6}{1} + \binom{7}{2} \\ a(5) = 7 - 12 + 21 \\ a(4) = 16 \end{gathered}}$$

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

   (a) $n = 4$

   $\square$

   (b) $n = 5$

   $\square$