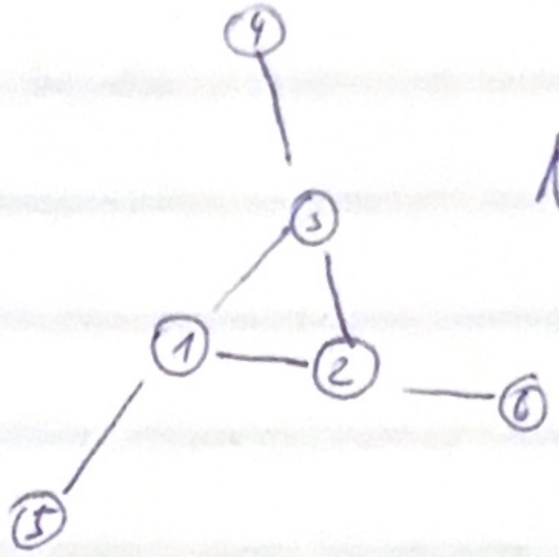
MAGIC 3-GON RING



N = 3

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$m = 2N$

$x_i = \{1,2,3,4,5,6\}$; $x_i \in \langle 1; m \rangle$ ORDERED

$i \in \langle 1, m \rangle$ $\quad 1,2,\dots m$

POSSIBLE TOTALS:

$\sum_{i=1}^{m} x_i + MIN(x_i + x_j + x_k)$ $\quad i,j,k \in \langle 1; m \rangle$, $i \neq j \neq k$

$MIN(x_{k1} + x_{k2} + .. + x_{kN}) = TOTAL_{MIN} = \sum_{i=1}^{m} + x_1 + x_2 + x_N$ $\quad k_1 \neq k_2 \neq k_N \in \langle 1; m \rangle$

$\sum_{i=1}^{m} + MAX(x_{k1} + x_{k2} + .. + x_{kN}) = TOTAL_{MAX} = \Sigma$

$T_{MIN} = \frac{n(n+1)}{2} + x_1 + x_2 + .. + x_N$ $\quad T_{MAX} = \frac{n(n+1)}{2} + x_{N+1} + .. + x_m$

$T_{MIN} = \frac{6 \cdot 7}{2} + 1 + 2 + 3 = (27)$ $\quad T_{MAX} = 21 + 4 + 5 + 6 = (56)$

$t \in \{ N / t \in \langle T_{MIN}; T_{MAX} \rangle \}$ $\quad T_i = \frac{t_i}{3}$

$t \in \{27, 30, 33, 36\}$

$T_i \in \{9, 10, 11, 12\}$

$T_{MIN} = \frac{m}{8}(5m+6) = \frac{N}{4}(10N+6) \; / N = \frac{10N+6}{4}$

$T_{MAX} = \frac{m}{4}\left(\frac{7m}{2} + 3\right) = \frac{N}{2}(7N+3) \; / N = \frac{7N+3}{2}$

5-GON

$N = 5$

$m = 10$

$x_i \in \langle 1; 10 \rangle$

$T_{MAX} = \frac{10 \cdot 11}{2} + 6 + 7 + 8 + 9 + 10$

$T_{MAX} = \frac{10}{4}\left(\frac{7 \cdot 10}{2} + 3\right) =$

$= 95$

$T_{MIN} = \frac{10}{8}(56) = 70$

$t_i \in \{70, 75, 80, 85, 90, 95\}$

$T \in \{14, 15, 16, 17, 18, 19\}$