

◇ OPAL Hunt 2

The Menu

The International Menu Organization meets in a different country every year, establishing prices now suited for the locals.

- 17.72** A configuration of rooks no two in the same row or column.
- 8085.44** A labelling of points on a circle such that for any four labels $a < b < c < d$ with $a + d = b + c$, the chord joining the points labelled a and d does not intersect the chord joining the points labelled b and c .
- 0.86** A positive integer such that every two consecutive digits in its decimal representation are of different parity.
- 6.13** A line in the plane not parallel to either axis nor with slope -1 .
- 2.23** A function $f: \mathbb{Q} \rightarrow \mathbb{Q}$ such that $f(x + f(y)) = f(x) + y$ or $f(f(x) + y) = x + f(y)$ for all rational numbers x and y .
- 13.05** An equilateral grid of numbers each of which is the difference of the two below it.
- 32.32** A finite set S of points in the plane such that for any two points A and B in S there is a third point C in S obeying $CA = CB$.
- 20.55** An $n \times n$ grid containing each of 1 to n^2 exactly once.
- 0.86** A process that starts with a line going through a single point P , that rotates clockwise about the pivot P until the first time that the line meets some other point, etc.
- 3977.27** An $n \times n$ matrix with entries in $\{1, \dots, 2n - 1\}$ such that for each $1 \leq i \leq n$, the i^{th} row and i^{th} column together contain each integer from 1 to $2n - 1$.