

The First 4 Mersenne Prime Squares (MPS) on the BIM

z=127

z=31

MPS = 31² = 961

Every Mersenne Prime Square has 6 unique embedded AREAS:

1. MPS: Mersenne Prime Square
2. PN: Perfect Number
3. OC: ODD Complement
4. PNS: Perfect Number Square
5. OCS: ODD Complement Square
6. CR: Complement Rectangle (repeated)

Each AREA is shown on the BIM as STEPS from the DIAGONAL.

STEPS = x/4, while x/2·Σ gives values.

Σ = sum of the coordinates. x,y,z shown.

This is the MPS 31² Pattern for p=5 Mp=31

- z² = MPS: Mersenne Prime Square ----- is always ODD
- xz = PN: Perfect Number ----- is always EVEN, +4
- yz = OC: ODD Complement ----- is always ODD, +3
- x² = PNS: Perfect Number Square ----- is always EVEN, +4
- y² = OCS: ODD Complement Square ----- is always ODD, +3
- xy = CR: Complement Rectangle (repeated) ----- is always EVEN, +4

x = y+1 = z - p = PN/Mp = 2^p-1 in the Euclid-Euler Theorem
 y = x-1 = z-x = Mp/OC
 z = x+y = Mp = Mersenne Prime = 2^p-1 in the Euclid-Euler Theorem.
 p = prime

All the other MPS will follow this same pattern with variation in the # of STEPS.
 See below for the MPS 127² Pattern for p=7 Mp=127

x=64

Every Mersenne Prime Square has 6 unique embedded AREAS:

1. MPS: (x+y)/2 · Σ
2. PN: x/2 · Σ
3. OC: y · Σ
4. PNS: x/2 · Σ or x/4 · Σ
5. OCS: y/2 · Σ
6. CR: x/2 · Σ or x/4 · Σ

Σ = sum of the Col, Row coordinates.

The EVENS – PN, PNS & CR – are defined by "x" the EVEN side.

The ODDS – OC and OCS – are defined by the "y" ODD side.

x/8 = 8
x/4 = 16
x/2 = 32
x = 64

y/3 = 21 = 3 · 7
y = 63

y=63

z=127

The first four Mersenne PRIME - Perfect Number Squares on the BIM