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

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 31^2 Pattern for p=5 Mp=31

z^2= MPS: Mersenne Prime Square -------- ----is always ODD
xz = PN: Perfect Number---------- is always EVEN, ÷4
yz = OC: ODD Complement---------- is always ODD, ÷3
x^2= PNS: Perfect Number Square---------- is always EVEN, ÷4
y^2= OCS: ODD Complement Square---------- is always ODD, ÷3
xy = CR: Complement Rectangle (repeated)-is always EVEN, ÷4

x= y+1= z-y = 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 127^2 Pattern for p=7 Mp=127

z=31 x=16 y=15 x=64

CR 240=11,19=Σ=30 30/2=15=y
OC 465=8,23=Σ=31=z
PNS 256=12,20=Σ=32 32/2=16=x
CR 240=28,32=Σ=60 60/4=15=y
PN 496=27,35=Σ=62 62/2=31=z
PNS 256=30,34=Σ=64 64/4=16=x
CR 4032=47,79=Σ=126 126/2=63=y
PNS 4096=48,80=Σ=128 128/2=64=x
OC 8001=32,95=Σ=127=z

ALL MPS follow this Pattern

Σ•2/2 and STEPS/2

●= the Σ of the PN Columns beyond the z=Mp Σ Column, z=MP Column & the not ÷4 EVEN Column:
Ex: z=127, 127, not ÷ EVEN Col 254

x/8= 8	508= 4x127	7620	
x/4=16	1016= 8x127	+254	8128
x/2=32	2032=16x127	+127	PN
x=64	4064=32x127	+127	

AND, the total # of Columns = p = 7

z=127 y=63 y/3=21=3•7 y=63

CR 4032=118,134=Σ=252 252/4=63=y
PN 8128=111,143=Σ=254 254/2=127=z
PNS 4096=120,136=Σ=256 256/4=64=x