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

MPS = 31^2 = 961

What happens when x, y and z are multiplied by p? And, of course, the same for xz, yz and z^2?

Here is for the
p=3,
x=4,
y=3,
z=7
MPS = z^2= 49:

As one continues with 7-STEP overlapping squares up to, and including, the MPS^2, one gets 7 squares -- each reflecting a sequential growth in the above paramenters.

What happens when x, y and z are multiplied by p? And, of course, the same for xz, yz and z^2?

Here is for the
p=5,
x=16,
y=15,
z=31
MPS = z^2= 961:

As one continues with 7-STEP overlapping squares up to, and including, the MPS^2, one gets 7 squares -- each reflecting a sequential growth in the above paramenters.

NOTES:
MPS=z^2=[2(x^2 + y^2)] -1
MPS = [2 (PNS + OCS)] -1

The PNS is found @ PDx, and OCS is found 1 back:
Ex: 1,4 9,16 225,256

The PNS is also found @ x/4 STEPS from the PD, where the Complement Rectangle (CR=xy) is found 1 back (diagonally).
Ex: PNS=x^2=16^2=256 is found x/4=16/4= 4 STEPS from the PD. The CR=xy is found diagonally back up 1 STEP= 240= 16·15= xy.

Running mulitiples of CR=240 out results in values 4 STEPS apart and on a downward diagonal that is y= 15 STEPS from the PD.

2·CR is also found back up 1 STEP from its PN out from the MPS diagonal.

Every MPS will have its Perfect Number (PN=xz) running along a perpendicular Diagonal x/4 STEPS from the PRIME DIAGONAL (PD). The Multiples of the PN will follow the Diagonal until it reaches the side Vertical Axis whereupon it will turn 90° and now proceed to run Diagonally Parallel to the PD at the STEPS distance away.

Here is for the p=2,3,5 MPS with a partial p=7
p=2 z=3 MPS = z^2= 9 in BLUE-GREEN
p=3 z=7 MPS = z^2= 49 in YELLOW
p=5 z=31 MPS = z^2= 961 in PURPLE
p=7 z=127 MPS = z^2= 16129 in RED