



$p=2$   
 $2^p=4$   
 $M_p=3$   
 $M_p^2=9$   
 $PD_i=4$

Every Perfect Number has an EVEN AREA that combines with its ODD Complement AREA to equal the Square of its Mersenne Prime

$p=3$   
 $2^p=8$   
 $M_p=7$   
 $M_p^2=49$   
 $PD_i=16$

Every Perfect Number has an EVEN AREA that combines with its ODD Complement AREA to equal the Square of its Mersenne Prime

$PN=(2^{p-1})(2^p-1)=2 \cdot 3$   
 $PN=[(M_p)(2^p)]/2=3 \cdot 4/2$   
 $PN=(M_p)^2-OC=9-3$   
 $PN=M_p+OC=3+3$   
 $PN=6$

$PN=(2^{p-1})(2^p-1)=4 \cdot 7$   
 $PN=[(M_p)(2^p)]/2=7 \cdot 8/2$   
 $PN=(M_p)^2-OC=49-21$   
 $PN=M_p+OC=7+21$   
 $PN=28$

$p=5$   
 $2^p=32$   
 $M_p=31$   
 $M_p^2=961$   
 $PD_i=256$

Every Perfect Number has an EVEN AREA that combines with its ODD Complement AREA to equal the Square of its Mersenne Prime

$PN=Perfect\ Number=6$   
 $OC=ODD\ Complement=3$   
 $M_p^2=PN+OC$   
 $=6+3=9=3^2$   
 $M_p=Mersenne\ PRIME=3$

$PN=Perfect\ Number=28$   
 $OC=ODD\ Complement=21$   
 $M_p^2=PN+OC$   
 $=28+21=49=7^2$   
 $M_p=Mersenne\ PRIME=7$

$PN=(2^{p-1})(2^p-1)=32 \cdot 31$   
 $PN=[(M_p)(2^p)]/2=31 \cdot 32/2$   
 $PN=(M_p)^2-OC=961-465$   
 $PN=M_p+OC=31+465$   
 $PN=496$

$p=7$   
 $2^p=128$   
 $M_p=127$   
 $M_p^2=16129$   
 $PD_i=64$

Every Perfect Number has an EVEN AREA that combines with its ODD Complement AREA to equal the Square of its Mersenne Prime

$PN=Perfect\ Number=496$   
 $OC=ODD\ Complement=465$   
 $M_p^2=PN+OC$   
 $=496+465=961=31^2$   
 $M_p=Mersenne\ PRIME=31$

$PN=(2^{p-1})(2^p-1)=64 \cdot 127$   
 $PN=[(M_p)(2^p)]/2=127 \cdot 128/2$   
 $PN=(M_p)^2-OC=16129-8001$   
 $PN=M_p+OC=127+8001$   
 $PN=8128$

$PN=Perfect\ Number=8128$   
 $OC=ODD\ Complement=8001$   
 $M_p^2=PN+OC$   
 $=8128+8001=16129=127^2$   
 $M_p=Mersenne\ PRIME=127$

$M_p^2=127^2=16129$   
 $PN=8128$   
 $=64 \cdot 127$   
 $OC=8001$   
 $=63 \cdot 127$

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