a \times a \times a
\begin{align*}
2R &= 1.4142 \times a \\
2R &= \varphi \\
2R &= \sqrt{a \times a \times a}
\end{align*}

TURN TAPER LINE
CENTRE PINION 3/4 TO BASE
CAN FIT FULLY WITH SOME SLIPPAGE
CANNON PINION FIT
2/3's UN CENTER PINION
FULLY ON
BOTTOM OF CANNON P.
TO HIT TOP OF CENTER P.
(TIGHTER THAN PIN
IN CENTER P.)

SQUARE = 0.5 \times 0.5
\varphi = 0.707
\sqrt{0.5} \times 0.5 = 0.7071

PUNCH
DRILL 5mm
TO MAKE HOLE
TURN 0.707
TO MAKE SQUARE