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Regulars



Puzzle page



Mathematical Misfits – two-dimensional

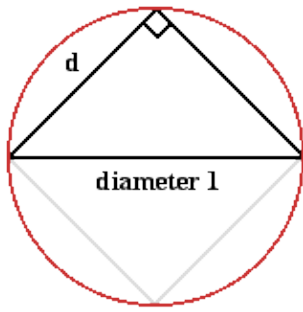
Take a square of sidelength 1; it has area 1 unit². The biggest circle that can fit inside has diameter 1 and area $\pi \times (0.5)^2 = \pi/4$ units².

The area of this circle divided by the area of the square containing it is $\pi/4$.

Now we fit the largest possible square inside that circle of diameter 1. We use Pythagoras's™ Theorem to find its sidelength d .

$$\begin{array}{rcl} 2d^2 & = & 1; \\ d & = & 1/\sqrt{2}. \end{array}$$

The area of this square is $1/2$ units².



The area of this square divided by the area of the circle containing it is $0.5 / (\pi/4) = 2/\pi$.

Since $\pi/4 > 2/\pi$, the round peg fits better in the square hole than the square peg fits in the round hole.

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