

'The laws of nature are but the mathematical thoughts of God.'
Euclid

FORMULA No.

W09

www.and-just-math.com

We are not mathematicians, but we love mathematics and create formulas ourselves.

'No other science boosts the faith in the strength of the human spirit like mathematics.' Hugo Steinhaus

1 WEEK = 7 DAYS 7 FORMULAS



'The laws of nature are but the mathematical thoughts of God.'

FORMULA No.

D091

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$$k \in N$$

$$\prod_{k=1}^{k=\infty} \left(1 - 4 \times \sin\left(\frac{3 \times \pi}{8 \times 5^k}\right) \times \sin\left(\frac{9 \times \pi}{8 \times 5^k}\right) \right) = \frac{\sqrt{2 - \sqrt{2}}}{2}$$



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$$k \in N$$

$$\sum_{k=1}^{k=\infty} \frac{1}{(4\times k-3)\times (4\times k-1)\times (4\times k+1)} = \frac{1}{8}\times \left(\frac{\pi}{2}-1\right)$$



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$$\prod_{k=1}^{k=\infty} \frac{cos\left(\frac{\pi}{5\times 2^k}\right)}{cos^2\left(\frac{\pi}{5\times 2^{k+1}}\right)} = \frac{\pi}{2\times\sqrt{25-10\times\sqrt{5}}}$$



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$$k \in N$$

$$\sum_{k=1}^{k=\infty} \frac{16 \times k^3 - 13 \times k^2 - k + 1}{(4 \times k - 3) \times (4 \times k - 2) \times (4 \times k - 1) \times (4 \times k + 1) \times (4 \times k + 2)}$$

$$= \frac{10 - \pi}{16^2}$$



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$$k \in N$$

$$\prod_{k=1}^{k=\infty} cos\left(\frac{\pi}{5\times 2^{2\times k-1}}\right)\times cos\left(\frac{\pi}{5\times 2^{2\times k}}\right) = \frac{5\times\sqrt{10-2\times\sqrt{5}}}{4\times\pi}$$



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$$\sum_{k=1}^{k=\infty} \frac{1}{(k+5)\times(k+7)} = \frac{13}{84}$$



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$$k \in N$$

$$\prod_{k=0}^{k=\infty} \left(1 - 4 \times \sin\left(\frac{\pi}{4 \times 5^k}\right) \times \sin\left(\frac{3 \times \pi}{4 \times 5^k}\right) \right) = \frac{\sqrt{2}}{2}$$

