

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

FORMULA No.

W17

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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.'

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FORMULA No.

D171

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$$k \in N$$

$$\sum_{k=1}^{k=\infty} \frac{3^{2 \times k - 1} \times (2 \times k + 3) + 2^{4 \times k + 1}}{k \times (2 \times k - 1) \times 2^{4 \times k + 1}} = \ln 7$$



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FORMULA No.

**D172** 

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



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**D173** 

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$$k \in N$$

$$\sum_{k=1}^{k=\infty} \frac{\left[3^{2\times k-1} \times (2\times k+3) + 2^{4\times k+1}\right] \times 7^{2\times k} + (3\times k+2) \times 2^{8\times k-1}}{k\times (2\times k-1) \times 2^{4\times k+1} \times 7^{2\times k}}$$
=  $\ln 11$ 



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$$k \in N$$

$$\prod_{k=\infty}^{k=\infty} cos\left(\frac{\pi}{3\times 2^{2\times k}}\right)\times cos\left(\frac{\pi}{3\times 2^{2\times k-1}}\right) = \frac{3}{\pi}$$



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D175

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$$k \in N$$

$$\sum_{k=1}^{k=\infty} \frac{7 \times (2 \times k + 3) \times 21^{2 \times k - 1} + 2 \times 28^{2 \times k} + 8 \times (k + 3) \times 24^{2 \times k - 1}}{k \times (2 \times k - 1) \times 2^{4 \times k + 1} \times 7^{2 \times k}}$$

$$= \ln 13$$



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$$k \in N$$

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



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$$k \in N$$

$$\sum_{k=\infty}^{k=\infty} \frac{e \times ln(2 \times k+1) - ln(2 \times k+3)}{e^k} = ln3$$

