

# **FORMULAS**

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

FORMULA No.

**W45** 

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



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$$\sum_{k=1}^{k=\infty} sin\left(\frac{9\times\pi}{8\times(k^2+17\times k+72)}\right)$$

$$\times cos\left(\frac{9\times(2\times k^2+35\times k+153)\times\pi}{8\times(k+9)\times(k^2+17\times k+72)}\right) = \frac{\sqrt{2}}{4}$$



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$$k \in N$$

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



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$$\sum_{k=1}^{k=\infty} \frac{k+4}{(k+5)!} = \frac{1}{120}$$

 $k \in N$ 



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D454

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$$\sum_{k=1}^{k=\infty} \frac{sin\left(\frac{(2\times k-1)\times \pi}{3\times 2^{k+1}\times k!}\right)}{cos\left(\frac{\pi}{3\times 2^{k+1}\times k!}\right)\times cos\left(\frac{\pi}{3\times 2^{k}\times (k-1)!}\right)} = \frac{\sqrt{3}}{3}$$



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$$\sum_{k=1}^{k=\infty} \frac{(k-1)\times k-36}{(k+5)^2\times (k+6)^2} = 0$$



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



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$$\sum_{k=1}^{k=\infty} \frac{k^2 + 6 \times k + 6}{k \times (k+1) \times (k+6)!} = \frac{1}{720}$$

