#### In memory of Justynke, my wife

FORMULA No.

**W27** 

# FORMULAS

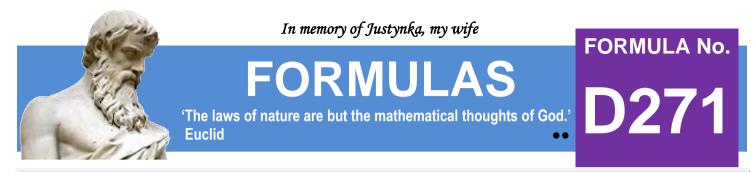
'The laws of nature are but the mathematical thoughts of God.' Euclid

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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

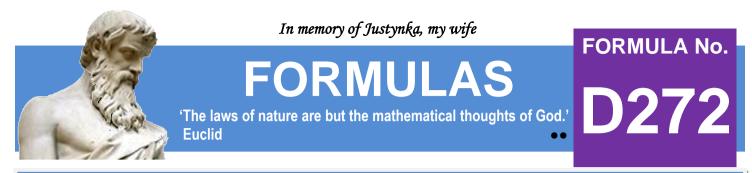




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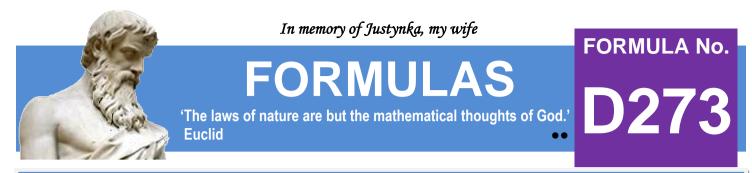
$$\sum_{k=1}^{k=\infty} 3^{k-1} \times \sin^3\left(\frac{\pi}{5 \times 3^{k-1}}\right) = \frac{12 \times \pi - 5 \times \sqrt{10 + 2 \times \sqrt{5}}}{80}$$



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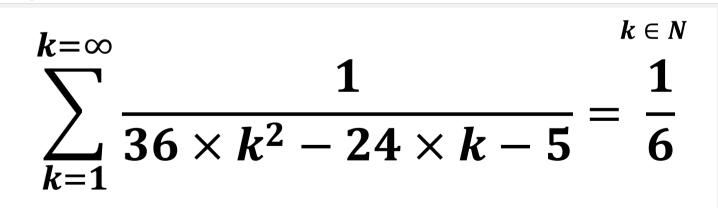
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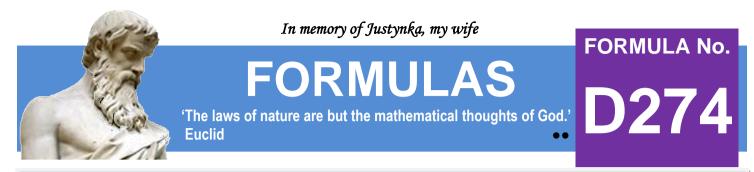
$$k \in N$$
$$\sum_{k=1}^{k=\infty} \frac{5 \times k! \times (k^2 + k + 1) + 4 \times 3^k}{(5 \times k \times k! + 2 \times 3^k) \times [5 \times (k + 1) \times (k + 1)! + 2 \times 3^{k+1}]} = \frac{1}{11}$$



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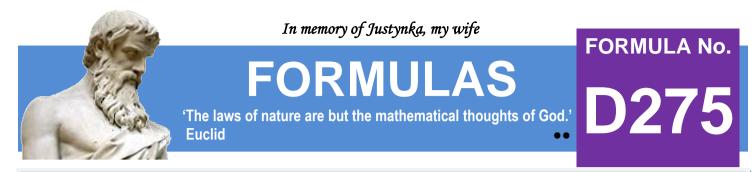




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$$\sum_{k=1}^{k=\infty} \frac{(k-3) \times 7^{k-1}}{(k+4)!} = \frac{1}{24}$$

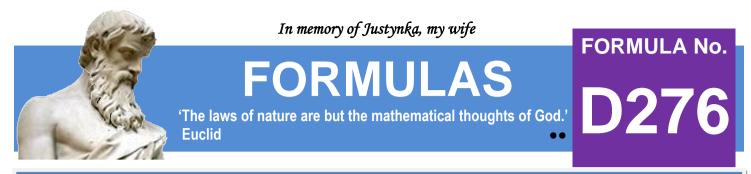


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 $k \in N$ 

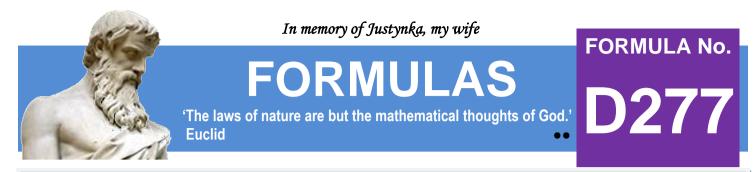
$$\sum_{k=1}^{k=\infty} \frac{2^{k-1} \times \left[ (2 \times k+9)^{k+1} + 4 \times (2 \times k+5)^{k-1} - 4 \times (2 \times k+7)^k \right]}{\left[ (2 \times k+9)^{k+1} - 2 \times (2 \times k+7)^k \right] \times \left[ (2 \times k+7)^k - 2 \times (2 \times k+5)^{k-1} \right]} = \frac{1}{7}$$



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$$k \in N$$
$$\sum_{k=1}^{k=\infty} \frac{33 \times k^2 - 31 \times k - 1}{(11 \times k - 10) \times (11 \times k + 1) \times (22 \times k - 21) \times (22 \times k + 1)} = \frac{1}{242}$$



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$$k \in N$$
$$\prod_{k=1}^{k=\infty} \left(1 - 4 \times \sin^2\left(\frac{\pi}{6 \times 5^k}\right) + 3, 2 \times \sin^4\left(\frac{\pi}{6 \times 5^k}\right)\right) = \frac{3}{\pi}$$

We invite you every week and every day to our website www.and-just-math.com

> Thanks for: Photo nonbirinonko z Pixabay Photo Gordon Johnson z Pixabay Photo lange-adrian z Pixabay