



# FORMULAS

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

FORMULA No.

**W50**

[www.and-just-math.com](http://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**

**NEW MATHEMATICAL FORMULA DAILY**



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FORMULA No.

**D501**

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$$\sum_{k=1}^{k=\infty} \text{arc ctg}(2 \times k^2) = \frac{\pi}{4} \quad k \in \mathbb{N}$$

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$$\sum_{k=1}^{k=\infty} \sin\left(\frac{2^{k-2} \times \pi}{3^{k-1}}\right) \times \sin\left(\frac{2^{k-2} \times \pi}{5 \times 3^{k-1}}\right) = \frac{3 + \sqrt{5}}{8} \quad k \in \mathbb{N}$$

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$k \in \mathbb{N}$

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

$$= \frac{(3 \times \sqrt{2} + 2 \times \sqrt{3} + \sqrt{6} + 4) \times \sqrt{8 + 2 \times \sqrt{6} - 4 \times \sqrt{2} - 4 \times \sqrt{3}} - 8}{16}$$

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$k \in \mathbb{N}$

$$\sum_{k=1}^{k=\infty} \frac{2 \times k + 1}{(3 + \sqrt{5}) \times k^4 + 2 \times (3 + \sqrt{5}) \times k^3 - (\sqrt{5} - 1) \times k^2 - 2 \times (1 + \sqrt{5}) \times k + 1 - \sqrt{5}} = \frac{1}{2}$$

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$k \in \mathbb{N}$

$$\sum_{k=1}^{k=\infty} (-1)^k \times \left(\frac{7 \times \pi}{2}\right)^{2 \times k - 1} \times \frac{(2 \times k + 1) \times 2^{2 \times k} - 7 \times \pi}{(2 \times k + 1)!} = 2$$

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$$\sum_{k=1}^{k=\infty} \frac{2^k}{(2 + \sqrt{3}) \times 2^{2 \times k} - 3 \times (1 + \sqrt{3}) \times 2^k + 4} = 1 \quad k \in \mathbb{N}$$

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$$\sum_{k=1}^{k=\infty} \frac{(k+1) \times (k^4 + 4 \times k^3 + 4 \times k^2 + k + 2)}{(k+2)! \times (k^4 + 4 \times k^3 + 3 \times k^2 - 2 \times k - 1)} = 1 \quad k \in N$$

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We invite you every  
week and every day  
to our website  
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Thanks for:  
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