



# FORMULAS

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

FORMULA No.

**W37**

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

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$$\sum_{k=1}^{k=\infty} \operatorname{tg} \left( \frac{\pi}{5 \times 2^k} \right) \times \left[ 1 + \operatorname{tg} \left( \frac{\pi}{5 \times 2^{k-1}} \right) \times \operatorname{tg} \left( \frac{\pi}{5 \times 2^k} \right) \right] \quad k \in \mathbb{N}$$
$$= \sqrt{5 - 2 \times \sqrt{5}}$$

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$k \in \mathbb{N}$

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

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$k \in N$

$$\sum_{k=1}^{k=\infty} (-1)^{k-1} \times \frac{\sin\left(\frac{5 \times \pi}{4 \times 3^k}\right) + \sin\left(\frac{5 \times \pi}{4 \times 3^{k+1}}\right)}{\operatorname{tg}\left(\frac{5 \times \pi}{2 \times 3^{k+1}}\right)} = \frac{\sqrt{6} - \sqrt{2}}{4} \pm 1$$

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$$\sum_{k=1}^{k=\infty} \frac{1}{2^k} \times \operatorname{tg} \left( \frac{\pi}{2^{k+2}} \right) = \frac{4 - \pi}{\pi} \quad k \in \mathbb{N}$$

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$$\sum_{k=1}^{k=\infty} \arctg \frac{(2 + \sqrt{3})^{k-2} \times (1 + \sqrt{3})}{1 + (2 + \sqrt{3})^{2 \times k - 3}} = \frac{5 \times \pi}{12} \quad k \in N$$

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$$\sum_{k=1}^{k=\infty} (-1)^{k-1} \times \frac{\sin\left(\frac{3 \times \pi}{5 \times 2^k}\right) + \sin\left(\frac{3 \times \pi}{5 \times 2^{k+1}}\right)}{\operatorname{tg}\left(\frac{9 \times \pi}{5 \times 2^{k+2}}\right)} = \frac{\sqrt{10 - 2 \times \sqrt{5}}}{4} \pm 1 \quad k \in \mathbb{N}$$

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We invite you every  
week and every day  
to our website  
[www.and-just-math.com](http://www.and-just-math.com)

Thanks for:  
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