

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

FORMULA No.

**W34** 

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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$$\sum_{k=1}^{k=\infty} tg\left(\frac{\pi}{5 \times 2^{k+1}}\right) \times \left[1 + tg\left(\frac{\pi}{5 \times 2^{k}}\right) \times tg\left(\frac{\pi}{5 \times 2^{k+1}}\right)\right]$$

$$= \frac{\sqrt{25 - 10 \times \sqrt{5}}}{5}$$



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$$k \in N$$

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



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$$\sum_{k=1}^{k=\infty} arctg \frac{6 \times 7^{k-1}}{1 + 7^{2 \times k - 1}} = \frac{\pi}{4}$$



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Euclid

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$$k \in N$$

$$\sum_{k=1}^{k=\infty} (-1)^{k-1} \times \frac{\sin\left(\frac{3\times\pi}{2^{k+2}}\right) + \sin\left(\frac{3\times\pi}{2^{k+3}}\right)}{tg\left(\frac{9\times\pi}{2^{k+4}}\right)} = \frac{\sqrt{2-\sqrt{2}}}{2} \pm 1$$



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$$k \in N$$

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



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$$k \in N$$

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

$$= \frac{\pi}{2^{2 \times k+3}}$$



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$$k \in N$$

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

