

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

FORMULA No.

W23

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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FORMULA No.

D231

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$$k \in N$$

$$\prod_{k=1}^{k=\infty} \cos \frac{\pi}{3 \times 2^{k+2}} = \frac{3 \times (\sqrt{6} - \sqrt{2})}{\pi}$$



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D232

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$$k \in N$$

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



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

$$= \frac{\sqrt{6} + \sqrt{2}}{8} \pm \frac{1}{2}$$



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$$\sum_{k=1}^{k=\infty} (-1)^{k-1} \times \frac{\sin\left(\frac{5 \times \pi}{11^k}\right)}{\cos\left(\frac{5 \times \pi}{12 \times 11^{k-1}}\right) \times \cos\left(\frac{5 \times \pi}{12 \times 11^k}\right)}$$

$$= 2 + \sqrt{3}$$



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$$k \in N$$

$$\sum_{k=\infty}^{k=\infty} sin\left(\frac{\pi}{4\times7^k}\right)\times cos\left(\frac{\pi}{3\times7^k}\right) = \frac{\sqrt{6}-\sqrt{2}}{8}$$



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$$k \in N$$

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



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$$k \in N$$

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

