FORMULAS

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

FORMULA No.

W25

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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

1 WEEK ≡ 7 DAYS ≡ 7 FORMULAS

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D251

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$$k \in N$$

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

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$$k \in N$$

$$\sum_{k=1}^{k=\infty} tg\left(\frac{5 \times \pi}{3 \times 2^{k+2}}\right) \times \left[1 + tg\left(\frac{5 \times \pi}{3 \times 2^{k+1}}\right) \times tg\left(\frac{5 \times \pi}{3 \times 2^{k+2}}\right)\right] = 2 + \sqrt{3}$$

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$$\prod_{k=1}^{k=\infty} \cos\frac{\pi}{3\times 2^{k+1}} = \frac{3}{\pi} \qquad k \in N$$

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$$k \in N$$

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

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$$k \in N$$

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

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$$\sum_{k=1}^{k=\infty} (-1)^{k-1} \times \frac{sin\left(\frac{\pi}{2 \times 3^{k-1}}\right)}{cos\left(\frac{\pi}{8 \times 3^{k-2}}\right) \times cos\left(\frac{\pi}{8 \times 3^{k-1}}\right)} \qquad k \in N$$

$$= \sqrt{2} + 1$$

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$$k \in N$$

$$\sum_{k=1}^{k=\infty} sin\left(\frac{5 \times \pi}{2^{k+2} \times 3^{k+1}}\right) \times cos\left(\frac{7 \times \pi}{2^{k+2} \times 3^{k+1}}\right) = \frac{1}{4}$$

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

Thanks for:
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