FORMULAS

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

FORMULA No.

W39

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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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$$k \in N$$

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

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$$\sum_{k=1}^{k=\infty} (-1)^{k-1} \times \frac{sin\left(\frac{9 \times \pi}{5 \times 2^{k+1}}\right)}{cos\left(\frac{3 \times \pi}{5 \times 2^{k}}\right) \times cos\left(\frac{3 \times \pi}{5 \times 2^{k+1}}\right)} \qquad k \in N$$

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

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$$k \in N$$

$$\sum_{k=1}^{k=\infty} sin\left(\frac{3 \times \pi}{5 \times 2^{k+2}}\right) \times cos\left(\frac{9 \times \pi}{5 \times 2^{k+2}}\right) = \frac{\sqrt{5}+1}{8}$$

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$$\sum_{k=1}^{k=\infty} arctg \frac{2^{k-1} \times \sqrt{5 - 2 \times \sqrt{5}}}{5 - 2 \times \sqrt{5} + 2^{2 \times k - 1}} = \frac{\pi}{5} \qquad k \in N$$

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$$k \in N$$

$$\sum_{k=1}^{k=\infty} sin\left(\frac{\pi}{5 \times 3^{k-1}}\right) \times sin\left(\frac{-\pi}{10 \times 3^{k-1}}\right) = \frac{\sqrt{10 - 2 \times \sqrt{5}} - 4}{8}$$

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$$k \in N$$

$$\sum_{k=1}^{k=\infty} (-1)^{k-1} \times \frac{ctg\left(\frac{3 \times \pi}{5 \times 2^{k}}\right) + ctg\left(\frac{3 \times \pi}{5 \times 2^{k+1}}\right)}{ctg\left(\frac{3 \times \pi}{5 \times 2^{k}}\right) \times ctg\left(\frac{3 \times \pi}{5 \times 2^{k+1}}\right)} = \frac{\sqrt{25 + 10 \times \sqrt{5}}}{5}$$

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$$k \in N$$

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

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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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