



FORMULA No.

D311

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

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

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



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$$\sum_{k=1}^{k=\infty} \operatorname{arc} tg\left(\frac{9}{10 \times k^2 + 44 \times k + 54}\right) = \operatorname{arc} tg\left(\frac{1}{3}\right)$$



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$$\prod_{k=1}^{k=\infty} \cos\left(\frac{3\times\pi}{2^{2\times k+3}}\right) \times \cos\left(\frac{3\times\pi}{2^{2\times k+4}}\right) = \frac{8\times\sqrt{2-\sqrt{2-\sqrt{2}}}}{3\times\pi}$$



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



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$$k \in N$$

$$\sum_{k=1}^{k=\infty} arc \, tg\left(\frac{100}{10100 \times k^2 - 10080 \times k - 9}\right) = arc \, tg(10)$$



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



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$$k \in N$$

$$\sum_{k=1}^{k=\infty} \frac{2 \times k^2 - 1}{(2 \times k^2 + 2 \times k + 1) \times (2 \times k^2 - 2 \times k + 1)} = \frac{1}{2}$$

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

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