



FORMULAS

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

FORMULA No.

W04

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

NEW MATHEMATICAL FORMULA DAILY



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$$\sum_{k=1}^{k=n} \frac{3 \times k^2 + 3 \times k + 6}{k^6 + 3 \times k^5 + 13 \times k^4 + 23 \times k^3 + 43 \times k^2 + 43 \times k + 7} \quad k, n \in \mathbb{N}$$
$$= \frac{n^3 + 3 \times n^2 + 8 \times n}{7 \times n^3 + 21 \times n^2 + 56 \times n + 49}$$

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$$\frac{1}{(k+1) \times (k+2)} \qquad k \in \mathbb{N}$$
$$= \frac{1}{(1 + \sqrt{2}) \times k^2 + (3 + 2 \times \sqrt{2}) \times k + 2 + \sqrt{2}}$$
$$+ \frac{1}{(\sqrt{2} + \sqrt{3}) \times k^2 + (5 + 2 \times \sqrt{6}) \times k + 3 \times \sqrt{2} + 2 \times \sqrt{3}}$$
$$+ \frac{1}{(2 + \sqrt{3}) \times k^2 + (7 + 4 \times \sqrt{3}) \times k + 6 + 4 \times \sqrt{3}}$$

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

$k, n \in \mathbb{N}$

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$$\sum_{k=1}^{k=n} \frac{-k \times \ln(k+1) + k \times \ln k + \ln k}{k^2 + k} = \frac{-\ln(n+1)}{n+1} \quad k, n \in \mathbb{N}$$

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$$\sum_{k=1}^{k=n} \frac{2 \times k + 1}{k^4 + 2 \times k^3 + k^2} = \frac{n^2 + 2 \times n}{n^2 + 2 \times n + 1} \quad k, n \in \mathbb{N}$$

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

$k, n \in N$

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$$\sum_{k=1}^{k=n} \frac{2^k + 1}{2^{2 \times k + 1} + 3 \times k \times 2^k + 2^k + k^2 + k} \quad k, n \in \mathbb{N}$$
$$= \frac{2^{n+1} + n - 2}{3 \times 2^{n+1} + 3 \times n + 3}$$

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week and every day
to our website
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Thanks for:
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