



FORMULAS

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

FORMULA No.

W12

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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FORMULA No.

D121

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

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

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

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

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$$\sum_{k=1}^{k=n} \frac{11 \times k \times \ln \frac{k+1}{k+2} - 5 \times \ln \frac{k+1}{k+2} + 11 \times \ln(k+1)}{(11 \times k - 5) \times (11 \times k + 6)} \quad k, n \in \mathbb{N}$$
$$= \frac{1}{6} \times \ln 2 - \frac{\ln(n+2)}{11 \times n + 6}$$

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D125

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

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

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

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We invite you every
week and every day
to our website
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Thanks for:
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