



# FORMULAS

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

FORMULA No.

**W03**

[www.and-just-math.com](http://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**



# FORMULAS

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Euclid

FORMULA No.

**D031**

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$$\sum_1^n \frac{8 \times k + 13}{16 \times k^4 + 104 \times k^3 + 269 \times k^2 + 325 \times k + 168} \quad k, n \in N$$
$$= \frac{4 \times n^2 + 17 \times n}{84 \times n^2 + 357 \times n + 441}$$

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FORMULA No.

**D032**

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$$\begin{aligned} & \frac{5}{k^2 + 7 \times k + 6} && k \in \mathbb{N} \\ &= \frac{1}{k^2 + 3 \times k + 2} + \frac{1}{k^2 + 5 \times k + 6} + \frac{1}{k^2 + 7 \times k + 12} \\ &+ \frac{1}{k^2 + 9 \times k + 20} + \frac{1}{k^2 + 11 \times k + 30} \end{aligned}$$

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**D033**

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

$$\sum_{k=1}^{k=n} \frac{1}{4 \times k \times \sqrt{k+1} + 4 \times k \times \sqrt{k} + 4 \times \sqrt{k \times (k+1)} + 4 \times k + \sqrt{k+1} + 5 \times \sqrt{k} + 2}$$
$$= \frac{2 \times n - 3 \times \sqrt{n+1} + 3}{12 \times n + 9}$$

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# FORMULAS

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FORMULA No.

**D034**

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

$$\sum_{k=1}^{k=n} \frac{-k \times \ln(k+1) + k \times \ln k + 16 \times \ln(k+1) - 15 \times \ln k + 12}{9 \times k^2 + 12 \times k \times \ln(k+1) + 12 \times k \times \ln k + 9 \times k + 16 \times \ln k \times \ln(k+1) + 12 \times \ln k}$$
$$= \frac{5 \times \ln(n+1) + 4 \times n}{4 \times \ln(n+1) + 3 \times n + 3}$$

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FORMULA No.

**D035**

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$$\sum_{k=1}^{k=n} \frac{2 \times k + 5}{k^4 + 10 \times k^3 + 37 \times k^2 + 60 \times k + 36} \quad k, n \in \mathbb{N}$$
$$= \frac{n^2 + 6 \times n}{9 \times n^2 + 54 \times n + 81}$$

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FORMULA No.

**D036**

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$$\sum_{k=1}^{k=n} \frac{tg\left(\frac{k+1}{k+2} \times \frac{\pi}{2}\right) - tg\left(\frac{k}{k+1} \times \frac{\pi}{2}\right)}{81 \times tg\left(\frac{k+1}{k+2} \times \frac{\pi}{2}\right) \times tg\left(\frac{k}{k+1} \times \frac{\pi}{2}\right) - 9 \times tg\left(\frac{k+1}{k+2} \times \frac{\pi}{2}\right) - 9 \times tg\left(\frac{k}{k+1} \times \frac{\pi}{2}\right) + 1} \quad k, n \in \mathbb{N}$$
$$= \frac{tg\left(\frac{n+1}{n+2} \times \frac{\pi}{2}\right) - 1}{72 \times tg\left(\frac{n+1}{n+2} \times \frac{\pi}{2}\right) - 8}$$

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FORMULA No.

**D037**

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$$\sum_{k=1}^{k=n} \frac{2^{k+1} + 9}{2^{2 \times k + 3} + 27 \times k \times 2^{k+1} + 9 \times 2^{k+1} + 81 \times k^2 + 81 \times k} \quad k, n \in \mathbb{N}$$
$$= \frac{2^{n+2} + 9 \times n - 4}{13 \times 2^{n+2} + 117 \times n + 117}$$

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week and every day  
to our website  
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