

*In memory of Justynka, my wife*

# FORMULAS

FORMULA No.

**W04**

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



[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**

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D041

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$k \in \mathbb{N}$

$$\sum_{k=1}^{k=\infty} \frac{(2 \times p_k + 1) \times p_{k+1} \times (p_{k+4} - p_{k+2}) \times p_{k+5} - p_k \times p_{k+2} \times (p_{k+5} - p_{k+3})}{p_k \times p_{k+1} \times p_{k+2} \times p_{k+3} \times p_{k+4} \times p_{k+5}} = \frac{5}{77}$$

$p_k$  ( $k$ -th prime number)

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$k \in \mathbb{N}$

$$\sum_{k=1}^{k=\infty} \frac{16 \times k^4 + 16 \times k^3 + 56 \times k^2 + 44 \times k + 9}{(2 \times k - 1)^2 \times (2 \times k + 1)^3 \times (2 \times k + 3)} = \frac{\pi^2}{8}$$

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$$\sum_{k=1}^{k=\infty} \frac{30 \times k^3 + 61 \times k^2 - 21 \times k - 49}{(3 \times k + 4) \times (3 \times k + 7) \times (k + 1)!} = 1 \quad k \in \mathbb{N}$$

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$$\sum_{k=1}^{k=\infty} \frac{1}{4 \times (2 \times k - 1)^2 - 25} = \frac{\pi}{40} \quad k \in \mathbb{N}$$

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$k \in \mathbb{N}$

$$\sum_{k=1}^{k=\infty} \frac{16 \times k^4 + 64 \times k^3 + 83 \times k^2 - 241 \times k - 693}{(k+2) \times (k+3) \times (16 \times k^2 - 121) \times (16 \times k^2 - 49)} = \frac{\pi}{72}$$

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$k \in \mathbb{N}$

$$\sum_{k=1}^{k=\infty} \frac{(p_{k+3} - p_{k+1}) \times k + 2 \times (p_{k+2} + p_{k+3})}{k \times (k + 1) \times (k + 2) \times (p_{k+1} + p_{k+2}) \times (p_{k+2} + p_{k+3})} = \frac{1}{16}$$

$p_k$  ( $k$ -th prime number)

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$k \in N$

$$\sum_{k=1}^{k=\infty} \frac{(p_{k+3} - p_{k+1}) \times k^2 + (4 \times p_{k+3} - p_{k+1}) \times k + 4 \times p_{k+3}}{k \times (k + 1)^2 \times (k + 2)^2 \times p_{k+1} \times p_{k+2} \times p_{k+3}} = \frac{1}{60}$$

$p_k$  ( $k$ -th prime number)

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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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Photo Gordon Johnson z Pixabay  
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