

*In memory of Justynka, my wife*

# FORMULAS

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



FORMULA No.

# W17

[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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# FORMULAS

FORMULA No.

**D171**

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$k \in N$

$$\sum_{k=1}^{k=\infty} \frac{k^7 + 10 \times k^6 + 61 \times k^5 + 244 \times k^4 + 580 \times k^3 + 772 \times k^2 + 528 \times k + 144}{k \times (k+1)^4 \times (k+2)^4 \times (k+3)^2} = \frac{4 \times \pi^2 - 33}{48}$$

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$$\sum_{k=1}^{k=\infty} \frac{784 \times k^4 - 1344 \times k^3 + 1059 \times k^2 + 11 \times k + 15}{(4 \times k - 3) \times (7 \times k - 6) \times (7 \times k + 1) \times (16 \times k^2 - 1) \times [16 \times (k + 1)^2 - 1]} = \frac{\pi - 2}{16}$$

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**D173**

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$k \in N$

$$\sum_{k=1}^{k=\infty} \frac{256 \times k^4 + 1664 \times k^3 + 5696 \times k^2 + 10744 \times k + 8019}{(4 \times k + 5)^2 \times (4 \times k + 7) \times (4 \times k + 9)^2 \times (4 \times k + 11)} = \frac{105 \times \pi - 304}{840}$$

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FORMULA No.

**D174**

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$k \in N$

$$\sum_{k=1}^{k=\infty} \frac{144 \times k^4 + 48 \times k^3 + 247 \times k^2 + 221 \times k + 60}{(3 \times k - 1) \times (3 \times k + 2) \times (16 \times k^2 - 1) \times [16 \times (k + 1)^2 - 1]} = \frac{4 - \pi}{8}$$

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# FORMULAS

FORMULA No.

**D175**

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$k \in \mathbb{N}$

$$\sum_{k=1}^{k=\infty} \frac{k^6 + 26 \times k^5 + 253 \times k^4 + 1288 \times k^3 + 3822 \times k^2 + 5488 \times k + 2401}{k^2 \times (k+1)^2 \times (k+6)^2 \times (k+7)^2} = \frac{\pi^2}{6}$$

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$k \in N$

$$\sum_{k=1}^{k=\infty} \frac{64 \times k^4 + 64 \times k^3 + 220 \times k^2 + 168 \times k + 27}{(2 \times k + 1) \times (2 \times k + 3) \times (16 \times k^2 - 9) \times (16 \times k^2 - 1)} = \frac{\pi}{8}$$

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$$\sum_{k=1}^{k=\infty} \frac{1}{4 \times (2 \times k - 1)^2 - 81} = \frac{\pi}{72} \quad k \in \mathbb{N}$$

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We invite you every  
week and every day  
to our website  
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