

# **FORMULAS**

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

FORMULA No.

**W21** 

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



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Euclid

FORMULA No.

**D211** 

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$$k \in N$$

$$\sum_{k=1}^{k=\infty} \frac{16 \times k^5 + 88 \times k^4 + 169 \times k^3 + 188 \times k^2 + 208 \times k + 64}{(4 \times k - 3) \times (4 \times k + 1) \times (k + 2)^3 \times (k + 3)^3 \times (k + 4)^3} = \frac{533 - 54 \times \pi^2}{54}$$



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**D212** 

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$$k \in N$$

$$\sum_{k=1}^{k=\infty} \frac{25 \times k^4 + 135 \times k^3 + 396 \times k^2 + 788 \times k + 576}{(k+2)^2 \times (k+3)^2 \times (k+4)^2 \times (5 \times k + 1) \times (5 \times k + 6)} = \frac{6 \times \pi^2 - 59}{18}$$



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$$k \in N$$

$$\sum_{k=1}^{k=\infty} \frac{\left[ (\pi^2 - 6) \times k^2 + 4 \times (2 \times \pi^2 - 9) \times k + 16 \times \pi^2 - 54 \right] \times 6^{k-1}}{(k+3)^2 \times (k+4)^2 \times \pi^{2 \times k}} = \frac{1}{16}$$



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**D214** 

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$$\sum_{k=1}^{k=\infty} \frac{1}{4 \times (2 \times k - 1)^2 - 361} = -\frac{\pi}{152}$$



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**D215** 

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$$k \in N$$

$$\sum_{k=1}^{k=\infty} \frac{144 \times k^4 - 96 \times k^3 - 485 \times k^2 - 167 \times k - 308}{(3 \times k - 1) \times (3 \times k + 2) \times (16 \times k^2 - 121) \times (16 \times k^2 - 49)} = \frac{\pi}{72}$$



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$$k \in N$$

$$\sum_{k=1}^{k=\infty} \frac{400 \times k^4 - 80 \times k^3 + 359 \times k^2 + 293 \times k + 60}{(5 \times k - 3) \times (5 \times k + 2) \times (16 \times k^2 - 1) \times [16 \times (k + 1)^2 - 1]} = \frac{4 - \pi}{8}$$



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$$k \in N$$

$$\sum_{k=1}^{k=\infty} \frac{4 \times k^4 + 32 \times k^3 + 125 \times k^2 + 264 \times k + 225}{(k+2)^2 \times (k+3)^2 \times (2 \times k + 3) \times (2 \times k + 5)} = \frac{2 \times \pi^2 - 15}{12}$$

