In memory of Justynke, my wife

FORMULA No.

W15

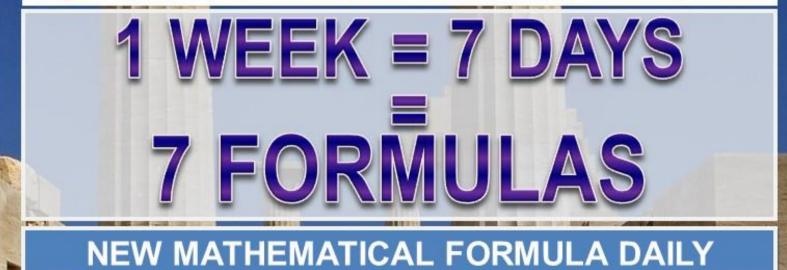
FORMULAS

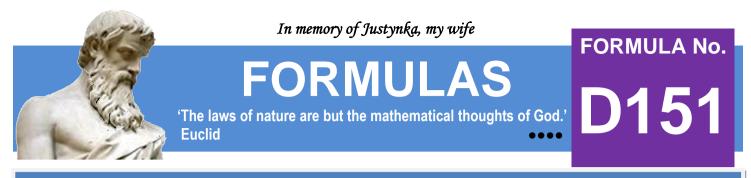
'The laws of nature are but the mathematical thoughts of God.'

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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



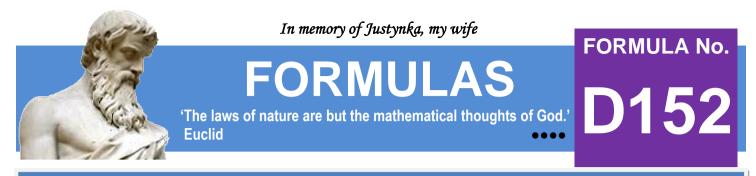


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 $k \in N$

$$\sum_{k=1}^{k=\infty} \frac{1296 \times k^4 - 2304 \times k^3 + 1699 \times k^2 - 49 \times k + 15}{(4 \times k - 3) \times (9 \times k - 8) \times (9 \times k + 1) \times (16 \times k^2 - 1) \times [16 \times (k + 1)^2 - 1]} = \frac{\pi - 2}{16}$$

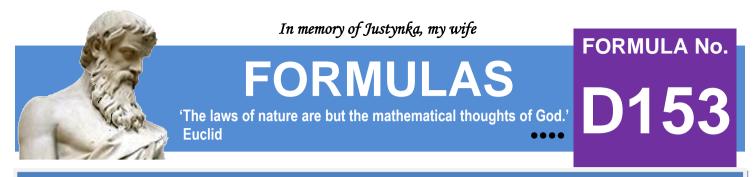


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$$\sum_{k=1}^{k=\infty} \frac{k^6 + 10 \times k^5 + 37 \times k^4 + 96 \times k^3 + 198 \times k^2 + 216 \times k + 81}{k^2 \times (k+1)^2 \times (k+2)^2 \times (k+3)^2} = \frac{\pi^2}{6}$$

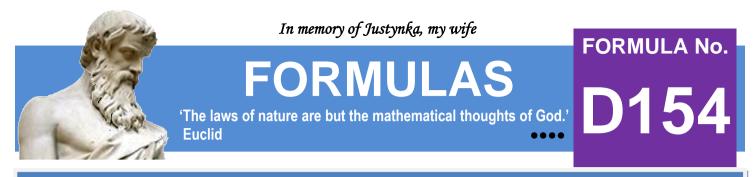


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$$\sum_{k=1}^{k=\infty} \frac{784 \times k^4 - 336 \times k^3 + 463 \times k^2 + 373 \times k + 60}{(7 \times k - 5) \times (7 \times k + 2) \times (16 \times k^2 - 1) \times [16 \times (k + 1)^2 - 1]} = \frac{4 - \pi}{8}$$

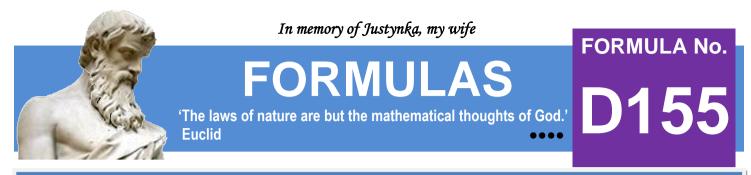


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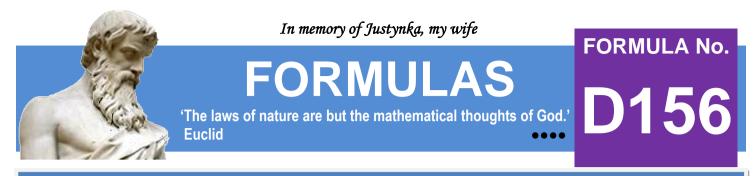
$$\sum_{k=1}^{k=\infty} \frac{36 \times k^5 + 192 \times k^4 + 325 \times k^3 + 228 \times k^2 + 192 \times k + 64}{(k+2)^3 \times (k+3)^3 \times (k+4)^3 \times (6 \times k - 5) \times (6 \times k + 1)} = \frac{533 - 54 \times \pi^2}{54}$$



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 $k \in N$ $\sum_{k=1}^{k=\infty} \frac{k^7 + 200 \times k^6 + 15098 \times k^5 + 527200 \times k^4 + 8002400 \times k^3 + 33500100 \times k^2 + 51000000 \times k + 25000000}{k \times (k+1)^3 \times (k+2)^2 \times (k+49)^2 \times (k+50)^2} = \frac{12 - \pi^2}{6}$

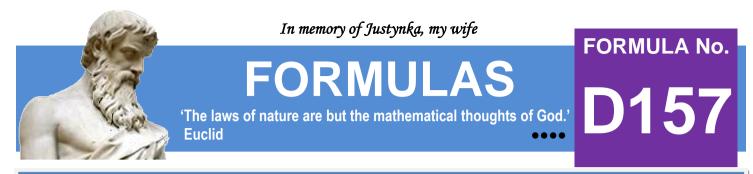


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 $k \in N$

$$\sum_{k=1}^{k=\infty} \frac{16 \times k^4 + 96 \times k^3 + 275 \times k^2 + 277 \times k + 48}{(k+3) \times (k+4) \times (16 \times k^2 - 9) \times (16 \times k^2 - 1)} = \frac{\pi}{8}$$



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$$\sum_{k=1}^{k=\infty} \frac{1}{4 \times (2 \times k - 1)^2 - 1369} = \frac{\pi}{296}$$

We invite you every week and every day to our website www.and-just-math.com

> Thanks for: Photo nonbirinonko z Pixabay Photo Gordon Johnson z Pixabay Photo lange-adrian z Pixabay