

Projeto Mathematical Ramblings

bit.ly/mathematicalramblings

Livro de equações de $\sin(nx)$ e $\cos(nx)$ segundo as funções antonioandre_sin_formula_nx e antonioandre_cos_formula_nx.

Última atualização: 29-12-2018.

$\sin(1x) = \sin x$
 $\cos(1x) = \cos x$
 $\sin(2x) = 2 \cos x \sin x$
 $\cos(2x) = \cos^2 x - \sin^2 x$
 $\sin(3x) = 3 \cos^2 x \sin x - \sin^3 x$
 $\cos(3x) = \cos^3 x - 3 \cos x \sin^2 x$
 $\sin(4x) = 4 \cos^3 x \sin x - 4 \cos x \sin^3 x$
 $\cos(4x) = \sin^4 x - 6 \cos^2 x \sin^2 x + \cos^4 x$
 $\sin(5x) = \sin^5 x - 10 \cos^2 x \sin^3 x + 5 \cos^4 x \sin x$
 $\cos(5x) = 5 \cos x \sin^4 x - 10 \cos^3 x \sin^2 x + \cos^5 x$
 $\sin(6x) = 6 \cos x \sin^5 x - 20 \cos^3 x \sin^3 x + 6 \cos^5 x \sin x$
 $\cos(6x) = -\sin^6 x + 15 \cos^2 x \sin^4 x - 15 \cos^4 x \sin^2 x + \cos^6 x$
 $\sin(7x) = -\sin^7 x + 21 \cos^2 x \sin^5 x - 35 \cos^4 x \sin^3 x + 7 \cos^6 x \sin x$
 $\cos(7x) = -7 \cos x \sin^6 x + 35 \cos^3 x \sin^4 x - 21 \cos^5 x \sin^2 x + \cos^7 x$
 $\sin(8x) = -8 \cos x \sin^7 x + 56 \cos^3 x \sin^5 x - 56 \cos^5 x \sin^3 x + 8 \cos^7 x \sin x$
 $\cos(8x) = \sin^8 x - 28 \cos^2 x \sin^6 x + 70 \cos^4 x \sin^4 x - 28 \cos^6 x \sin^2 x + \cos^8 x$
 $\sin(9x) = \sin^9 x - 36 \cos^2 x \sin^7 x + 126 \cos^4 x \sin^5 x - 84 \cos^6 x \sin^3 x + 9 \cos^8 x \sin x$
 $\cos(9x) = 9 \cos x \sin^8 x - 84 \cos^3 x \sin^6 x + 126 \cos^5 x \sin^4 x - 36 \cos^7 x \sin^2 x + \cos^9 x$
 $\sin(10x) = 10 \cos x \sin^9 x - 120 \cos^3 x \sin^7 x + 252 \cos^5 x \sin^5 x - 120 \cos^7 x \sin^3 x + 10 \cos^9 x \sin x$
 $\cos(10x) = -\sin^{10} x + 45 \cos^2 x \sin^8 x - 210 \cos^4 x \sin^6 x + 210 \cos^6 x \sin^4 x - 45 \cos^8 x \sin^2 x + \cos^{10} x$
 $\sin(11x) = -\sin^{11} x + 55 \cos^2 x \sin^9 x - 330 \cos^4 x \sin^7 x + 462 \cos^6 x \sin^5 x - 165 \cos^8 x \sin^3 x + 11 \cos^{10} x \sin x$
 $\cos(11x) = -11 \cos x \sin^{10} x + 165 \cos^3 x \sin^8 x - 462 \cos^5 x \sin^6 x + 330 \cos^7 x \sin^4 x - 55 \cos^9 x \sin^2 x + \cos^{11} x$
 $\sin(12x) = -12 \cos x \sin^{11} x + 220 \cos^3 x \sin^9 x - 792 \cos^5 x \sin^7 x + 792 \cos^7 x \sin^5 x - 220 \cos^9 x \sin^3 x + 12 \cos^{11} x \sin x$
 $\cos(12x) = \sin^{12} x - 66 \cos^2 x \sin^{10} x + 495 \cos^4 x \sin^8 x - 924 \cos^6 x \sin^6 x + 495 \cos^8 x \sin^4 x - 66 \cos^{10} x \sin^2 x + \cos^{12} x$
 $\sin(13x) = \sin^{13} x - 78 \cos^2 x \sin^{11} x + 715 \cos^4 x \sin^9 x - 1716 \cos^6 x \sin^7 x + 1287 \cos^8 x \sin^5 x - 286 \cos^{10} x \sin^3 x + 13 \cos^{12} x \sin x$
 $\cos(13x) = 13 \cos x \sin^{12} x - 286 \cos^3 x \sin^{10} x + 1287 \cos^5 x \sin^8 x - 1716 \cos^7 x \sin^6 x + 715 \cos^9 x \sin^4 x - 78 \cos^{11} x \sin^2 x + \cos^{13} x$
 $\sin(14x) = 14 \cos x \sin^{13} x - 364 \cos^3 x \sin^{11} x + 2002 \cos^5 x \sin^9 x - 3432 \cos^7 x \sin^7 x + 2002 \cos^9 x \sin^5 x - 364 \cos^{11} x \sin^3 x + 14 \cos^{13} x \sin x$
 $\cos(14x) = -\sin^{14} x + 91 \cos^2 x \sin^{12} x - 1001 \cos^4 x \sin^{10} x + 3003 \cos^6 x \sin^8 x - 3003 \cos^8 x \sin^6 x + 1001 \cos^{10} x \sin^4 x - 91 \cos^{12} x \sin^2 x + \cos^{14} x$
 $\sin(15x) = -\sin^{15} x + 105 \cos^2 x \sin^{13} x - 1365 \cos^4 x \sin^{11} x + 5005 \cos^6 x \sin^9 x - 6435 \cos^8 x \sin^7 x + 3003 \cos^{10} x \sin^5 x - 455 \cos^{12} x \sin^3 x + 15 \cos^{14} x \sin x$
 $\cos(15x) = -15 \cos x \sin^{14} x + 455 \cos^3 x \sin^{12} x - 3003 \cos^5 x \sin^{10} x + 6435 \cos^7 x \sin^8 x - 5005 \cos^9 x \sin^6 x + 1365 \cos^{11} x \sin^4 x - 105 \cos^{13} x \sin^2 x + \cos^{15} x$

Comunicar erro: "a.vandre.g@gmail.com".