

#	Функция $S(x), y(x)$	Диапазон	k
1	$S = 1 + \frac{\ln 3}{1!}x + \frac{\ln^2 3}{2!}x^2 + \dots + \frac{\ln^n 3}{n!}x^n$ $y = 3^x$	$0.1 \leq x \leq 1$	10
2	$S = \cos x + \frac{\cos 2x}{2} + \dots + \frac{\cos nx}{n}$ $y = -\ln  2 \sin(x/2) $	$\pi/5 \leq x \leq 9\pi/5$	40
3	$S = x - \frac{x^3}{3!} + \dots + (-1)^n \frac{x^{2n+1}}{(2n+1)!}$ $y = \sin x$	$0.1 \leq x \leq 1$	10
4	$S = \sin x - \frac{\sin 2x}{2} + \dots + (-1)^{n-1} \frac{\sin nx}{n}$ $y = x/2$	$\pi/5 \leq x \leq 4\pi/5$	40
5	$S = 1 + \frac{x}{1!} + \frac{x^2}{2!} + \dots + \frac{x^n}{n!}$ $y = e^x$	$1 \leq x \leq 2$	15
6	$S = 1 + \frac{\cos(\pi/4)}{1!}x + \dots + \frac{\cos(n\pi/4)}{n!}x^n$ $y = e^{x \cos(\pi/4)} \cos(x \sin(\pi/4))$	$0.1 \leq x \leq 1$	25
7	$S = 1 - \frac{x^2}{2!} + \dots + (-1)^n \frac{x^{2n}}{(2n)!}$ $y = \cos x$	$0.1 \leq x \leq 1$	10
8	$S = x \sin \frac{\pi}{4} + x^2 \sin(\frac{2\pi}{4}) + \dots + x^n \sin(\frac{n\pi}{4})$ $y = \frac{x \cdot \sin(\pi/4)}{1 - 2x \cdot \cos(\pi/4) + x^2}$	$0.1 \leq x \leq 0.8$	40
9	$S = x + \frac{x^5}{5} + \dots + \frac{x^{4n+1}}{4n+1}$ $y = 0.25 \ln \frac{1+x}{1-x} + 0.5 \operatorname{arctg} x$	$0.1 \leq x \leq 0.8$	30
10	$S = 1 + \frac{\cos x}{1!} + \dots + \frac{\cos nx}{n!}$ $y = e^{\cos x} \cos(\sin x)$	$0.1 \leq x \leq 1$	20
11	$S = 1 + \frac{3x^2}{1!} + \dots + \frac{2n+1}{n!}x^{2n}$ $y = (1 + 2x^2)e^{x^2}$	$0.1 \leq x \leq 1$	10
12	$S = \frac{x \cos(\pi/3)}{1} + x^2 \frac{\cos(2\pi/3)}{2} + \dots + \frac{x^n \cos(n\pi/3)}{n}$ $y = -0.5 \ln(1 - 2x \cos(\pi/3) + x^2)$	$0.1 \leq x \leq 0.8$	35
13	$S = \frac{x-1}{x+1} + \frac{(x-1)^3}{3(x+1)^3} + \dots + \frac{(x-1)^{2n+1}}{(2n+1)(x+1)^{2n+1}}$ $y = 0.5 \ln x$	$0.2 \leq x \leq 1$	10
14	$S = -\cos x + \frac{\cos(2x)}{2^2} + \dots + (-1)^n \frac{\cos(nx)}{n^2}$ $y = \frac{1}{4}(x^2 - \frac{\pi^2}{3})$	$\pi/5 \leq x \leq \pi$	20
15	$S = \frac{x^3}{3} - \frac{x^5}{15} + \dots + (-1)^{n+1} \frac{x^{2n+1}}{4n^2-1}$ $y = (1 + x^2) \frac{\operatorname{arctg}(x)}{2} - \frac{x}{2}$	$0.1 \leq x \leq 1$	30
16	$S = \sin x + \frac{\sin 3x}{3} + \dots + \frac{\sin(2n-1)x}{2n-1}$ $y = \pi/4$	$\pi/10 \leq x \leq 9\pi/10$	40

17	$S = 1 + \frac{x^2}{2!} + \dots + \frac{x^{2n}}{(2n)!}$ $y = \frac{e^x + e^{-x}}{2}$	$0.1 \leq x \leq 1$	10
18	$S = \frac{\cos(2x)}{3} + \frac{\cos(4x)}{15} + \dots + \frac{\cos(2nx)}{4n^2-1}$ $y = \frac{1}{2} - \frac{\pi  \sin x }{4}$	$0.1 \leq x \leq 0.8$	50
19	$S = 1 + \frac{2x}{1!} + \dots + \frac{(2x)^n}{n!}$ $y = e^{2x}$	$0.1 \leq x \leq 1$	20
20	$S = 1 + 2 \cdot \frac{x}{2} + \dots + \left(\frac{n^2+1}{n!}\right) \cdot \frac{x^n}{2^n}$ $y = \left(\frac{x^2}{4} + \frac{x}{2} + 1\right)e^{x/2}$	$0.1 \leq x \leq 1$	30
21	$S = x - \frac{x^3}{3} + \dots + (-1)^n \frac{x^{2n+1}}{2n+1}$ $y = \operatorname{arctg} x$	$0.1 \leq x \leq 0.5$	40
22	$S = 1 - \frac{3}{2}x^2 + \dots + (-1)^n \frac{2n^2+1}{(2n)!} x^{2n}$ $y = (1 - 0.5x^2) \cos x - 0.5x \cdot \sin x$	$0.1 \leq x \leq 1$	35
23	$S = -\frac{(2x)^2}{2} + \frac{(2x)^4}{24} - \dots + (-1)^n \frac{(2x)^{2n}}{(2n)!}$ $y = 2(\cos^2 x - 1)$	$0.1 \leq x \leq 1$	15
24	$S = -(1+x)^2 + \frac{(1+x)^4}{2} - \dots + (-1)^n \frac{(1+x)^{2n}}{n}$ $y = \ln \frac{1}{x^2+2x+2}$	$-2 \leq x \leq -0.1$	40
25	$S = x + \frac{x^3}{3!} + \dots + \frac{(x)^{2n+1}}{(2n+1)!}$ $y = \frac{e^x - e^{-x}}{2}$	$0.1 \leq x \leq 1$	20
26	$S = \frac{x}{3!} + \frac{4x^2}{5!} + \dots + \frac{n^2}{(2n+1)!} x^n$ $y = \frac{1}{2} \left( \frac{x+1}{\sqrt{x}} \operatorname{sh} \sqrt{x} - \operatorname{ch} \sqrt{x} \right)$	$0.2 \leq x \leq 0.8$	20
27	$S = x \cos(\pi/4) + x^2 \cos(2\pi/4) + \dots + x^n \cos(n\pi/4)$ $y = \frac{x \cos(\pi/4) - x^2}{x^2 - 2x \cos(\pi/4) + 1}$	$0.1 \leq x \leq 0.8$	40
28	$S = 3x + 8x^2 + \dots + n(n+2)x^n$ $y = \frac{x(3-x)}{(1-x)^3}$	$0.1 \leq x \leq 0.8$	40
29	$S = \cos x + \frac{\cos 3x}{3^2} + \dots + \frac{\cos((2n-1)x)}{(2n-1)^2}$ $y = \frac{\pi^2}{8} -  x  \frac{\pi}{4}$	$\pi/5 \leq x \leq \pi$	40
30	$S = \frac{x^2}{2} - \frac{x^4}{12} + \dots + (-1)^{n+1} \frac{x^{2n}}{2n(2n-1)}$ $y = x \operatorname{arctg} x - \ln \sqrt{1+x^2}$	$0.1 \leq x \leq 0.8$	10