|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 510 | π | 90 | $$\sqrt{2}$$ | $$\frac{1}{6}$$ | 73 | (π + 6)3 |
| 2*х* | *х* | *–* 10*х*  | $\frac{1}{8} $*х* | π *х* | *– х* | $\sqrt{3 }$*х* |
| $$\frac{3}{x}$$ | $$\frac{5}{x-1}$$ | $$\frac{π}{x}$$ | $$\frac{10}{x+2}$$ | $$\frac{6}{x-3}$$ | $$\frac{\sqrt{2}}{3-x}$$ | $$\frac{7}{x+5}$$ |
| *x*3 | *x*4 | *x*5 | *x*6 | *x*7 | *x*8 | *x*100 |
| 2 *x*5 | 3 *x*4 | 7 *x*3 | 8 *x*2 | 9 *x*6 | 10 *x*7 | 11 *x*8 |
| (*x* – 3)3 | (*x* + 2)2 | (*x* – 6)4 | (*x* +7)5 | (8 + *x*)6 | (7 – *x*)7 | (9 – *x*)5 |
| (2*x* – 5)4 | (3*x* + 6)3 | (7 – 5*x*)2 | (8 – 2*x*)3 | (7*x* – 8)4 | (5 – 3*x*)3 | (7 – 8*x*)2 |
| $$\frac{2}{x^{2}}$$ | $$\frac{3}{x^{3}}$$ | $$-\frac{4}{x^{2}}$$ | $$\frac{5}{x^{6}}$$ | $$-\frac{6}{x^{5}}$$ | $$\frac{7}{x^{4}}$$ | $$-\frac{8}{x^{5}}$$ |
| $$\frac{3}{(x+5)^{2}}$$ | $$\frac{2}{(x-3)^{2}}$$ | $$\frac{1}{(x-6)^{2}}$$ | $$\frac{7}{(5-x)^{2}}$$ | $$\frac{8}{(3-x)^{3}}$$ | $$\frac{5}{(x+2)^{4}}$$ | $$\frac{7}{(8-x)^{3}}$$ |
| $$\frac{1}{\sqrt{x}}$$ | $$\frac{2}{\sqrt{x}}$$ | $$\frac{1}{\sqrt[3]{x}}$$ | $$\frac{1}{\sqrt[4]{x}}$$ | $$\frac{2}{\sqrt[5]{x}}$$ | $$\frac{3}{\sqrt{x}}$$ | $$\frac{3}{\sqrt[3]{x}}$$ |
| $$\sqrt[3]{x}$$ | $$\sqrt[3]{x^{2}}$$ | $$\sqrt[4]{x}$$ | $$\sqrt[4]{x^{3}}$$ | $$\sqrt[5]{x}$$ | $$\sqrt[5]{x^{2}}$$ | $$\sqrt[5]{x^{4}}$$ |
| $$\frac{1}{\sqrt{6x-7}}$$ | $$\frac{1}{\sqrt{2x-3}}$$ | $$\frac{1}{\sqrt{3x-5}}$$ | $$\frac{1}{\sqrt{4-2x}}$$ | $$\frac{1}{\sqrt{7-5x}}$$ | $$\frac{3}{\sqrt[3]{6-8x}}$$ | $$\frac{4}{\sqrt[4]{7x-8}}$$ |
| sin 2*x* | sin 3*x* | sin$ \frac{x}{4}$ | sin 5*x* | sin (3*x* – $\frac{π}{3}$) | sin (4*x* + $\frac{π}{6}$) | sin (2 – 5*x*) |
| cos 3*x* | cos 2*x* | cos 5*x* | cos $\left(x-\frac{π}{6}\right)$ | cos $\left(2x+\frac{π}{7}\right)$ | cos $\left(\frac{π}{9}-3x\right)$ | cos$\left(\frac{π}{8}+6x\right)$ |
| tg 2*x* | tg $\left(3x-\frac{π}{6}\right)$ | tg $\left(4x+\frac{π}{3}\right)$ | tg 5*x* | tg $\frac{x}{6}$ | tg 7*x* | tg 8*x* |
| ctg 3*x* | ctg $\left(2x+\frac{π}{3}\right)$ | ctg $\left(3x-\frac{π}{6}\right)$ | ctg 2*x* | ctg 3*x* | ctg $\frac{π}{4}$ | ctg 4*x* |
| 2sin 3*x* | 3sin 2*x* | 4sin $\left(x+\frac{π}{4}\right)$ | 2sin$\left(2x+\frac{π}{6}\right)$ | 3sin$\left(\frac{x}{3}– \frac{π}{5}\right)$  | 4sin $\left(\frac{x}{7}-\frac{π}{6}\right)$ | 3sin$\left(\frac{π}{4}+2x\right)$ |
| 3cos 2*x* | 2cos 3*x* | 4cos 3*x* | 5cos$ \frac{x}{5}$ | 6cos$ \frac{ x}{6}$ | 7cos$\left(x-\frac{π}{6}\right)$ | 8cos$\left(2x-\frac{π}{3}\right)$ |
| 4tg 2*x* | 3tg $\left(x+\frac{π}{3}\right)$ | 2tg $\left(3x+\frac{π}{6}\right)$ | 3tg 3*x* | 5tg 2*x* | 3tg $\left(2x-\frac{π}{3}\right)$ | 2tg $\left(\frac{π}{4}-x\right)$ |
| 5ctg 3*x* | 3ctg 3*x*  | 5ctg 2*x*  | 2ctg $\left(\frac{π}{4}-x\right)$ | 3ctg $\left(x+\frac{π}{3}\right)$ | 7ctg 2*x* | 2ctg $\left(2x-\frac{π}{6}\right)$ |
| sin2 2*x* | sin3 *x* | sin2 2*x* | sin2$\left(2x+\frac{π}{6}\right)$ | sin3$\left(\frac{π}{4}-\frac{x}{3}\right)$ | sin2$\left(\frac{π}{3}-2x\right)$ | sin43*x* |
| cos2 *x* | cos2$\left(x+\frac{π}{3}\right)$ | cos2$\left(x-\frac{π}{6}\right)$ | cos2 2*x* | cos2 3*x* | cos2 $\left(\frac{π}{4}-x\right)$ | cos2$\left(\frac{π}{6}+x\right)$ |
| tg 2*x* | tg 22*x* | tg 23*x* | tg 2$\left(x+\frac{π}{3}\right)$ | tg 3$\left(x-\frac{π}{6}\right)$ | tg 3*x* | tg 32*x* |
| ctg 2*x* | ctg 33*x* | ctg 22*x* | ctg 3*x* | ctg 2$\left(x+\frac{π}{3}\right)$ | ctg 3$\left(x-\frac{π}{6}\right)$ | ctg 23*x* |
| 2sin3 2*x* | 3cos2 3*x* | 2tg3 2*x* | 3ctg2 3*x* | 2cos3 $\left(3x-\frac{π}{6}\right)$ | 3ctg2 $\left(2x+\frac{π}{6}\right)$ | 4cos2 6*x* |
| $$e^{2x}$$ | $$e^{3x}$$ | $$2e^{5x}$$ | $$3e^{x}$$ | $$4e^{2x}$$ | $$7e^{x^{2}}$$ | $$e^{cosx}$$ |
| $$2^{x}$$ | $$3^{2x}$$ | $$4^{x^{2}}$$ | $$5^{2x-1}$$ | $$7^{sinx}$$ | $$8^{2cosx}$$ | $$9^{tgx}$$ |
| 2ln*x* | ln(*x* + 1) | ln(*x*2– 2) | ln2*x* | 3ln3*x* | 2ln3(*x* – 5)  | 3lnsin*x* |
| $$log\_{3}x$$ | $$log\_{4}2x$$ | $$4log\_{5}^{2}x$$ | $$log\_{7}(5x-1)$$ | $$lg\_{}^{3}(2x-1)$$ | 2lgsin*x* | 3lg2(*x*2 – 5) |

**Карточка 9**