

### Oblicz

- $\log_2 32 - \log_2 16$
- $\frac{1}{2} \log_3 9 + \ln e^2$
- $2 \arcsin \frac{\sqrt{3}}{2} - \arctg (\operatorname{tg} \frac{\pi}{4})$
- $\log_3 81 - \log_3 27$
- $\frac{1}{2} \log_5 25 + \ln e^3$
- $4 \arcsin \frac{\sqrt{2}}{2} + 3 \arctg (\operatorname{tg} \frac{\pi}{3})$
- $\log_4 64 - \log_4 16$
- $\frac{1}{2} \log_4 16 - \ln e$
- $2 \arcsin \frac{1}{2} - \arcsin \frac{\sqrt{3}}{2}$

### Oblicz granice ciągów

- $\lim_{n \rightarrow \infty} \frac{n^2 - 3n + 1}{2n^2 + n + 5}$
- $\lim_{n \rightarrow \infty} \left(1 + \frac{2}{2n - 1}\right)^{n-3}$
- $\lim_{n \rightarrow \infty} (\sqrt{n^2 + n + 3} - n)$
- $\lim_{n \rightarrow \infty} \frac{3n^2 + 2n - 4}{2n^2 - n - 2}$
- $\lim_{n \rightarrow \infty} \left(1 + \frac{3}{n + 1}\right)^{2n-1}$
- $\lim_{n \rightarrow \infty} (n - \sqrt{n^2 + n - 1})$
- $\lim_{n \rightarrow \infty} \frac{4n^2 + n - 3}{3n^2 + n + 1}$
- $\lim_{n \rightarrow \infty} \left(1 + \frac{4}{n - 1}\right)^{2n+1}$
- $\lim_{n \rightarrow \infty} (\sqrt{n^2 + 2} - \sqrt{n^2 - n + 3})$

### Oblicz pochodną I rzędu

- $y = x^3 - 2x^2 + 4x$
- $y = (2x - 1)^4$
- $y = e^{-x} \sin x$
- $y = (x + 1)^3 \sqrt{x}$
- $y = \frac{1+x}{x^2}$
- $y = \frac{1}{x^2+1}$
- $y = e^{2x}(x^2 - 1)^2$
- $y = \arctg(x^2)$
- $y = \frac{x+2}{\sqrt{x}}$
- $y = \sqrt{x^3 + x - 1}$
- $y = \sqrt{x} \ln x$
- $y = \arcsin(2x)$
- $y = \frac{\sqrt{x}-2x^3}{x}$
- $y = \frac{1}{\sqrt{5x+3}}$
- $y = \frac{x-1}{x+2}$
- $y = 4x - 3 + \ln(x^3 + 2x)$
- $y = \cos^2 x$
- $y = e^{3x-1}$
- $y = \frac{2x}{\sin x}$
- $y = \arccos(e^x)$
- $y = \sin^2 x$
- $y = \ln(\cos x)$
- $y = x - 2 \ln x$
- $y = e^{\cos x} \sin x$

### Oblicz granice funkcji

- $\lim_{x \rightarrow 0} \frac{e^x - e^{-x}}{\sin x}$
- $\lim_{x \rightarrow 0} \frac{x - \sin x}{x^2}$
- $\lim_{x \rightarrow 1} \frac{x^7 - 7x + 6}{x^2 - 2x + 1}$
- $\lim_{x \rightarrow 0} \frac{x^2 - x}{\sin x}$
- $\lim_{x \rightarrow 1} \frac{x^3 - 3x + 2}{x^4 - 4x + 3}$
- $\lim_{x \rightarrow 0} \frac{x \cos x}{e^{2x} + e^{-2x} - 2}$

### Zbadaj monotoniczność i wyznacz ekstrema funkcji

- $f(x) = (x - 1)^3(x + 1)$
- $f(x) = \frac{x^2}{x - 1}$
- $f(x) = (x + 2)^2(x - 4)^2$
- $f(x) = 2xe^{-x^2}$
- $f(x) = x + \frac{4}{x}$
- $f(x) = 2\sqrt{x^2 + 2x + 2}$

**Oblicz całki**

- $\int (2x + 3\sqrt{x} + 5e^{-x}) dx$
- $\int \frac{x^2 + 1}{x} dx$
- $\int 2xe^{3x} dx$
- $\int (x - 1) \cos x dx$
- $\int 2xe^{x^2} dx$
- $\int x \sin(x^2 + 1) dx$
- $\int \frac{x}{x^2 + 1} dx$
- $\int \frac{2}{x^2 - 1} dx$
- $\int \frac{5x - 5}{x^2 + x - 6} dx$
- $\int \frac{1}{x^2 + 4x + 5} dx$
- $\int \frac{2}{x^2 + 4} dx$
- $\int \sqrt[3]{x + 4} dx$
- $\int x\sqrt{x - 2} dx$
- $\int \cos^3 x dx$
- $\int \cos^2 x \sin x dx$

**Oblicz pole obszaru ograniczonego wykresami krzywych**

- $y = -x + 2, y = x, x = 0$
- $y = -x, y = -x + 2, y = 0$
- $y = x, y = 2, x = 0$
- $y = (x - 1)^2, y = 4$
- $y = -x^2 + 5, y = 4x$
- $y = x^2, y = -x + 2, y = 0$
- $y = x^2, y = -x^2 + 4x$