

865. $y = \sin^n x \cos nx$.
866. $y = \sin [\sin (\sin x)]$.
867. $y = \frac{\sin^2 x}{\sin x^2}$.
868. $y = \frac{\cos x}{2 \sin^2 x}$.
869. $y = \frac{1}{\cos^n x}$.
870. $y = \frac{\sin x - x \cos x}{\cos x + x \sin x}$.
871. $y = \operatorname{tg} \frac{x}{2} - \operatorname{ctg} \frac{x}{2}$.
872. $y = \operatorname{tg} x - \frac{1}{3} \operatorname{tg}^3 x + \frac{1}{5} \operatorname{tg}^5 x$.
873. $y = 4 \sqrt[3]{\operatorname{ctg}^2 x} + \sqrt[3]{\operatorname{ctg}^8 x}$.
874. $y = \sec^2 \frac{x}{a} + \operatorname{cosec}^2 \frac{x}{a}$.
875. $y = \sin [\cos^2 (\operatorname{tg}^2 x)]$.
876. $y = e^{-x^2}$.
877. $y = 2^{\operatorname{tg} \frac{1}{x}}$.
878. $y = e^x (x^2 - 2x + 2)$.
879. $y = \left[\frac{1-x^2}{2} \sin x - \frac{(1+x)^2}{2} \cos x \right] e^{-x}$.
880. $y = e^x \left(1 + \operatorname{ctg} \frac{x}{2} \right)$.
881. $y = \frac{\ln 3 \cdot \sin x + \cos x}{3^x}$.
882. $y = e^{ax} \frac{a \sin bx - b \cos bx}{\sqrt{a^2 + b^2}}$.
883. $y = e^x + e^{e^x} + e^{e^{e^x}}$.
884. $y = \left(\frac{a}{b} \right)^x \left(\frac{b}{x} \right)^a \left(\frac{x}{a} \right)^b$ ($a > 0, b > 0$).
885. $y = x^{a^a} + a^{x^a} + a^{a^x}$ ($a > 0$).
886. $y = \lg^3 x^2$.
887. $y = \ln (\ln (\ln x))$.
888. $y = \ln (\ln^2 (\ln^3 x))$.
889. $y = \frac{1}{2} \ln (1+x) - \frac{1}{4} \ln (1+x^2) - \frac{1}{2(1+x)}$.
890. $y = \frac{1}{4} \ln \frac{x^2 - 1}{x^2 + 1}$.
891. $y = \frac{1}{4(1+x^4)} + \frac{1}{4} \ln \frac{x^4}{1+x^4}$.
892. $y = \frac{1}{2\sqrt{6}} \ln \frac{x\sqrt{3} - \sqrt{2}}{x\sqrt{3} + \sqrt{2}}$.
893. $y = \frac{1}{1-k} \ln \frac{1+x}{1-x} - \frac{\sqrt{k}}{1-k} \ln \frac{1+x\sqrt{k}}{1-x\sqrt{k}}$ ($0 < k < 1$).
894. $y = \sqrt{x+1} - \ln (1 + \sqrt{x+1})$.
895. $y = \ln (x + \sqrt{x^2 + 1})$.
896. $y = x \ln (x + \sqrt{1+x^2}) - \sqrt{1+x^2}$.
897. $y = x \ln^2 (x + \sqrt{1+x^2}) - 2\sqrt{1+x^2} \ln (x + \sqrt{1+x^2}) + 2x$.
898. $y = \frac{x}{2} \sqrt{x^2 + a^2} + \frac{a^2}{2} \ln (x + \sqrt{x^2 + a^2})$.
899. $y = \frac{1}{2\sqrt{ab}} \ln \frac{\sqrt{a+x}\sqrt{b}}{\sqrt{a-x}\sqrt{b}}$ ($a > 0, b > 0$).