871. $y = \operatorname{tg} \dfrac{x}{2} - \operatorname{ctg} \dfrac{x}{2}$.

872. $y = \operatorname{tg} x - \dfrac{1}{3} \operatorname{tg}^3 x + \dfrac{1}{5} \operatorname{tg}^5 x$.

873. $y = 4 \sqrt[3]{\operatorname{ctg}^2 x} + \sqrt[3]{\operatorname{ctg}^8 x}$.

874. $y = \sec^2 \dfrac{x}{a} + \operatorname{cosec}^2 \dfrac{x}{a}$.

875. $y = \sin [\cos^2 (\operatorname{tg}^3 x)]$.   **876.** $y = e^{-x^2}$.

877. $y = 2^{\operatorname{tg} 1/x}$.   **878.** $y = e^x (x^2 - 2x + 2)$.

879. $y = \left[\dfrac{1 - x^2}{2} \sin x - \dfrac{(1 - x)^2}{2} \cos x \right] e^{-x}$.

880. $y = e^x \left(1 + \operatorname{ctg} \dfrac{x}{2} \right)$.

881. $y = \dfrac{\ln 3 \cdot \sin x + \cos x}{3^x}$.

882. $y = e^{ax} \dfrac{a \sin bx - b \cos bx}{\sqrt{a^2 + b^2}}$.

883. $y = e^x + e^{e^x} + e^{e^{e^x}}$.

884. $y = \left(\dfrac{a}{b} \right)^x \left(\dfrac{b}{x} \right)^a \left(\dfrac{x}{a} \right)^b$ $(a > 0,\ b > 0)$.

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. $y = \dfrac{1}{2} \ln (1 + x) - \dfrac{1}{4} \ln (1 + x^2) - \dfrac{1}{2 (1 + x)}$.

890. $y = \dfrac{1}{4} \ln \dfrac{x^2 - 1}{x^2 + 1}$.

891. $y = \dfrac{1}{4 (1 + x^4)} + \dfrac{1}{4} \ln \dfrac{x^4}{1 + x^4}$.

892. $y = \dfrac{1}{2 \sqrt{6}} \ln \dfrac{x \sqrt{3} - \sqrt{2}}{x \sqrt{3} + \sqrt{2}}$.

893. $y = \dfrac{1}{1 - k} \ln \dfrac{1 + x}{1 - x} + \dfrac{\sqrt{k}}{1 - k} \ln \dfrac{1 + x \sqrt{k}}{1 - x \sqrt{k}}$
$$(0 < k < 1).$$

894. $y = \sqrt{x + 1} - \ln (1 + \sqrt{x + 1})$.