7.1.62

$$y = \frac{(x^3-2)\cdot\sqrt[3]{(x-1)}}{(x+5)^4}$$

$$\ln y = \ln \frac{(x^3-2)\cdot(x-1)^{\frac{1}{3}}}{(x+5)^4}$$

$$(\ln y)' = \left(\ln(x^3-2) + \frac{1}{3}\ln(x-1) - 4\ln(x+5)\right)'$$

$$\frac{1}{y}\cdot y' = \frac{1}{x^3-2} + \frac{1}{3(x-1)} - \frac{4}{x+5}$$

$$y' = \frac{(x^3-2)\cdot\sqrt[3]{(x-1)}}{(x+5)^4}\left(\frac{1}{x^3-2} + \frac{1}{3(x-1)} - \frac{4}{x+5}\right)$$

7.1.63

$$y = (\operatorname{tg} x)^{\cos x}$$

$$\ln y = \ln \operatorname{tg}^{\cos x}$$

$$(\ln y)' = (\cos x \cdot \ln \operatorname{tg} x)'$$

$$\frac{1}{y} \cdot y' = -\sin x \cdot \ln \operatorname{tg} x + \frac{1}{\operatorname{tg} x} \cdot \cos x \cdot \frac{1}{\cos^2 x}$$

$$\frac{1}{y} \cdot y' = -\sin x \cdot \ln \operatorname{tg} x + \frac{1}{\sin x}$$

$$y' = (\operatorname{tg} x)^{\cos x} \cdot \left( -\sin x \cdot \ln \operatorname{tg} x + \frac{1}{\sin x} \right)$$

$$y' = \sin x \cdot \operatorname{tg} x^{\cos x} \cdot (-\ln \operatorname{tg} x + 1)$$

7.1.64

$$y = \frac{(1-x^2) \cdot \cos^6 x}{\sqrt[7]{x^5}}$$

$$\ln y = \ln \frac{1-x^2 \cdot \cos^6 x}{\sqrt[7]{x^5}}$$

$$\ln y = \ln(1-x^2) + 6 \ln \cos x - \frac{5}{7} \ln x$$

$$\frac{1}{y} \cdot y' = \frac{1}{1-x^2} + \frac{6}{\cos x} - \frac{5}{7x}$$

$$y' = \frac{(1-x^2) \cdot \cos^6 x}{\sqrt[7]{x^5}} \cdot \left( \frac{1}{1-x^2} + \frac{6}{\cos x} - \frac{5}{7x} \right)$$