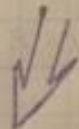


$$2) \quad y = \sqrt{x}^{\arctg(x+x^3)}$$

~~И~~ Прологарифмируем обе части

$$\frac{y'}{y} = \left(\frac{\ln(x) \cdot \arctg(x+x^3)}{2} \right)'$$



$$y' = x^{\arctg(x+x^3)/2} \cdot \left(\frac{\ln(x) \cdot \arctg(x+x^3)}{2} \right)' =$$

$$\begin{aligned} &= x^{\arctg(x+x^3)/2} \cdot \left(\frac{1}{2} \cdot (\arctg(x+x^3))' \cdot (x^3+x)' \cdot \ln(x) + \right. \\ &\quad \left. + \arctg(x+x^3) \cdot \frac{1}{x} \right) = x^{\arctg(x+x^3)/2} \cdot \left(\frac{1}{2} \cdot \left(\frac{3x^2+1}{1+(x+x^3)^2} \cdot \ln(x) + \right. \right. \\ &\quad \left. \left. + \arctg(x+x^3) \cdot \frac{1}{x} \right) \right) = x^{\arctg(x+x^3)/2} \cdot \left(\frac{(3x^2+1) \cdot \ln(x)}{(1+(x+x^3)^2) \cdot 2} + \right. \\ &\quad \left. + \frac{\arctg(x+x^3)}{2x} \right) \end{aligned}$$