

24) Найти производную:

$$\begin{aligned} & \left( \ln(\sin^3(x^2+2x+1)+1) \right)' = \\ &= \frac{1}{\sin^3(x^2+2x+1)+1} \left( \sin^3(x^2+2x+1)+1 \right)' = \\ &= \frac{1}{\sin^3(x^2+2x+1)+1} \left( \left( \sin^3(x^2+2x+1) \right)' + (1)' \right) = \\ &= \frac{1}{\sin^3(x^2+2x+1)+1} \left( 3\sin^2(x^2+2x+1) (\sin(x^2+2x+1))' + 0 \right) = \\ &= \frac{1}{\sin^3(x^2+2x+1)+1} 3\sin^2(x^2+2x+1) \cos(x^2+2x+1) (x^2+2x+1)' = \\ &= \frac{3\sin^2(x^2+2x+1) \cos(x^2+2x+1)}{\sin^3(x^2+2x+1)+1} (x^2 + (2x)' + (1)') = \\ &= \frac{3\sin^2(x^2+2x+1) \cos(x^2+2x+1)}{\sin^3(x^2+2x+1)+1} (2x+2+0) = \\ &= \frac{3\sin^2(x^2+2x+1) \cos(x^2+2x+1) (2x+2)}{\sin^3(x^2+2x+1)+1} = \\ &= \frac{3 \cdot 2(x+1) \sin^2(x^2+2x+1) \cos(x^2+2x+1)}{\sin^3(x^2+2x+1)+1} = \\ &= \frac{6(x+1) \sin^2(x^2+2x+1) \cos(x^2+2x+1)}{\sin^3(x^2+2x+1)+1} \end{aligned}$$

Ответ:

$$\left( \ln(\sin^3(x^2+2x+1)+1) \right)' = \frac{6(x+1) \sin^2(x^2+2x+1) \cos(x^2+2x+1)}{\sin^3(x^2+2x+1)+1}$$