1 introductory work to the Minecraft clan "Matanists"

1.1 differentiate expression

Solution

$$x \cdot x \cdot x$$

Obviously

$$x + x \cdot x + x \cdot x$$

1.2 differentiate expression

$$\frac{\sin(x) \cdot \cos(x)}{5 + 4 \cdot 1 + \ln(x) \cdot \ln(x) \cdot 1 \cdot 1}$$

Obviously

$$\frac{A0 - A1}{A2}$$

$A0 = \cos(x) \cdot \cos(x) + (-1) \cdot \sin(x) \cdot \sin(x) \cdot 9 + \ln(x) \cdot \ln(x)$
$A1 = \sin(x) \cdot \cos(x) \cdot \frac{1}{x} \cdot \ln(x) + \frac{1}{x} \cdot \ln(x)$
$A2 = 9 + \ln(x) \cdot \ln(x) \cdot 9 + \ln(x) \cdot \ln(x)$

1.3 differentiate expression

$$\frac{\frac{\sin(x) \cdot \cos(x)}{5+4 \cdot 1+\ln(x) \cdot \ln(x) \cdot 1 \cdot 1}}{\cos(x)} \cdot \ln(\frac{\frac{\frac{\cos(x)}{x}}{x}}{x})$$

Every Soviet schoolchild understands

$$A0 \cdot \ln(\frac{\frac{\frac{\cos(x)}{x}}{x}}{x}) + \frac{A1}{x \cdot x} \cdot \frac{1}{\frac{\frac{\frac{\cos(x)}{x}}{x}}{x}} \cdot \frac{\frac{\sin(x) \cdot \cos(x)}{9+\ln(x) \cdot \ln(x)}}{\cos(x)}$$

$A0 = \frac{A2 \cdot \cos(x) - A3}{\cos(x) \cdot \cos(x)}$
$A3 = \frac{\sin(x) \cdot \cos(x)}{9+\ln(x) \cdot \ln(x)} \cdot (-1) \cdot \sin(x)$

1.4 differentiate expression

$$\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{x}{x}}{x}}{x}}{x}}{x}}{x}}{x}}{x}}{x} + \frac{\frac{\frac{\frac{\frac{\cos(x)}{\sin(x)}}{\cos(x)}}{\ln(x)}}{\cos(x)}}{\sin(x)}$$

Obviously

$$\frac{\frac{A0-\frac{\frac{\frac{\frac{\frac{\frac{\frac{x}{x}}{x}}{x}}{x}}{x}}{x}}{x}}{x\cdot x} \cdot x - \frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{x}{x}}{x}}{x}}{x}}{x}}{x}}{x}}{x}}{x \cdot x} + A1$$

A0 $= \frac{\frac{A2}{x\cdot x}\cdot x-\frac{\frac{\frac{\frac{\frac{\frac{x}{x}}{x}}{x}}{x}}{x}}{x}}{x\cdot x} \cdot x$

A1 $= \frac{\frac{A3}{\cos(x)\cdot\cos(x)}\cdot\sin(x)-\frac{\frac{\frac{\frac{\cos(x)}{\sin(x)}}{\cos(x)}}{\ln(x)}}{\cos(x)}\cdot\cos(x)}{\sin(x)\cdot\sin(x)}$

1.5 differentiate expression

$\sin(x)\cdot\ln(x)\cdot\cos(x)+\sin(x)\cdot\ln(x)\cdot\cos(x)+\sin(x)\cdot\ln(x)\cdot\cos(x)+\sin(x)\cdot\ln(x)\cdot\cos(x)+\sin(x)\cdot\ln(x)\cdot$co

It's not hard to notice

$$A0 + A1 + A2 + A3$$

A0 $= A4 + A5 + A6$
A5 $= \cos(x) \cdot \ln(x) + \frac{1}{x} \cdot \sin(x) \cdot \cos(x) + (-1) \cdot \sin(x) \cdot \sin(x) \cdot \ln(x)$
A6 $= \cos(x) \cdot \ln(x) + \frac{1}{x} \cdot \sin(x) \cdot \cos(x) + (-1) \cdot \sin(x) \cdot \sin(x) \cdot \ln(x)$
A3 $= \cos(x) \cdot \ln(x) + \frac{1}{x} \cdot \sin(x) \cdot \cos(x) + (-1) \cdot \sin(x) \cdot \sin(x) \cdot \ln(x)$