The original expression has the form

$$f(x) = 2^{2 \cdot x} + \frac{\frac{2^2}{36}}{x - 8 \cdot x^3}$$

By the too simple mathematical transformations: $2^{2 \cdot x} + \frac{\frac{2^2}{36}}{x - 8 \cdot x^3} = 2^{2 \cdot x} + \frac{1}{9 \cdot x - 72 \cdot x^3}$

after making substitutions, we will get:

$$f(x) = 2^A + C$$

$A = 2 \cdot x$

$B = 72 \cdot x^3$

$C = \frac{1}{9 \cdot x - B}$

Trying to take a derivative of $2^A + C$...

Trying to take a derivative of 2^A...

Lets take a derivative of A
Trying to take a derivative of $2 \cdot x$...

By the too simple mathematical transformations: $2 \cdot 1 = 2$

Having counted the most obvious derivative, which the Soviet spermatozoa were actually able to calculate in their minds, we get: $(2 \cdot x)'(x) = 2$

By the too simple mathematical transformations: $2 = 2$

So $A'_x = 2$

By the too simple mathematical transformations: $2^A \cdot \ln 2 \cdot A'_x = 2^A \cdot \ln 2 \cdot A'_x$

Having counted the most obvious derivative, which the Soviet spermatozoa were actually able to calculate in their minds, we get: $(2^A)'(x) = 2^A \cdot \ln 2 \cdot A'_x$

Lets take a derivative of C
Trying to take a derivative of $\frac{1}{9 \cdot x - B}$...

Trying to take a derivative of $9 \cdot x - B$...

Trying to take a derivative of $9 \cdot x$...

By the too simple mathematical transformations: $9 \cdot 1 = 9$

Having counted the most obvious derivative, which the Soviet spermatozoa were actually able to calculate in their minds, we get: $(9 \cdot x)'(x) = 9$

Lets take a derivative of B
Trying to take a derivative of $72 \cdot x^3$...

Trying to take a derivative of x^3...

By the too simple mathematical transformations: $3 \cdot x^{3-1} \cdot 1 = 3 \cdot x^2$

Having counted the most obvious derivative, which the Soviet spermatozoa were actually able to calculate in their minds, we get: $(x^3)'(x) = 3 \cdot x^2$

By the too simple mathematical transformations: $72 \cdot 3 \cdot x^2 = 216 \cdot x^2$

Having counted the most obvious derivative, which the Soviet spermatozoa were actually able to calculate in their minds, we get: $(72 \cdot x^3)'(x) = 216 \cdot x^2$

By the too simple mathematical transformations: $216 \cdot x^2 = 216 \cdot x^2$

So $B'_x = 216 \cdot x^2$

By the too simple mathematical transformations: $9 - B'_x = 9 - B'_x$

Having counted the most obvious derivative, which the Soviet spermatozoa were actually able to calculate in their minds, we get: $(9 \cdot x - B)'(x) = 9 - B'_x$

By the too simple mathematical transformations: $\frac{0 \cdot (9 \cdot x - B) - 1 \cdot (9 - B'_x)}{(9 \cdot x - B)^2} = \frac{-9 + B'_x}{(9 \cdot x - B)^2}$

Having counted the most obvious derivative, which the Soviet spermatozoa were actually able to calculate in their minds, we get: $(\frac{1}{9 \cdot x - B})'(x) = \frac{-9 + B'_x}{(9 \cdot x - B)^2}$

By the too simple mathematical transformations: $\frac{-9+B'_x}{(9 \cdot x - B)^2} = \frac{-9+B'_x}{(9 \cdot x - B)^2}$

So $C'_x = \frac{-9+B'_x}{(9 \cdot x - B)^2}$

By the too simple mathematical transformations: $2^A \cdot \ln 2 \cdot A'_x + C'_x = 2^A \cdot \ln 2 \cdot A'_x + C'_x$

Having counted the most obvious derivative, which the Soviet spermatozoa were actually able to calculate in their minds, we get: $(2^A + C)'(x) = 2^A \cdot \ln 2 \cdot A'_x + C'_x$

In total, we imeem(poimeem):

$$f'(x) = 2^A \cdot \ln 2 \cdot A'_x + C'_x$$

$A = 2 \cdot x$

$A'_x = 2$

$C'_x = \frac{-9+B'_x}{(9 \cdot x - B)^2}$

$B'_x = 216 \cdot x^2$

$B = 72 \cdot x^3$