The original expression

$$z^z \cdot 4 + 5 \cdot abc^{abc} + 16 \cdot abc^2 + 4 \cdot abc^2 \cdot 16$$

After mental calculation:

$$(z^z)' = \log(z) \cdot 0 \cdot z^z + z \cdot 0 \cdot z^{z-1}$$

It is well known that:

$$(z^z \cdot 4)' = 4 \cdot (\log(z) \cdot 0 \cdot z^z + z \cdot 0 \cdot z^{z-1}) + z^z \cdot 0$$

Using WolframAlpha we have:

$$(abc^{abc})' = \log(abc) \cdot 1 \cdot abc^{abc} + abc \cdot 1 \cdot abc^{abc-1}$$

Every child knows that:

$$(5 \cdot abc^{abc})' = abc^{abc} \cdot 0 + 5 \cdot (\log(abc) \cdot 1 \cdot abc^{abc} + abc \cdot 1 \cdot abc^{abc-1})$$

For a detailed explanation you should purchase the paid version:

$$(abc^2)' = \log(abc) \cdot 0 \cdot abc^2 + 2 \cdot 1 \cdot abc^{2-1}$$

If you are familiar with calculus:

$$(16 \cdot abc^2)' = abc^2 \cdot 0 + 16 \cdot (\log(abc) \cdot 0 \cdot abc^2 + 2 \cdot 1 \cdot abc^{2-1})$$

It's not a secret that:

$$(5 \cdot abc^{abc} + 16 \cdot abc^2)' = abc^{abc} \cdot 0 + 5 \cdot (\log(abc) \cdot 1 \cdot abc^{abc} + abc \cdot 1 \cdot abc^{abc-1}) + abc^2 \cdot 0 + 16 \cdot (\log(abc) \cdot 0 \cdot abc^2 + 2 \cdot 1 \cdot abc^{2-1})$$

After mental calculation:

$$(z^z \cdot 4 + 5 \cdot abc^{abc} + 16 \cdot abc^2)' = 4 \cdot (\log(z) \cdot 0 \cdot z^z + z \cdot 0 \cdot z^{z-1}) + z^z \cdot 0 + abc^{abc} \cdot 0 + 5 \cdot (\log(abc) \cdot 1 \cdot abc^{abc} + abc \cdot 1 \cdot abc^{abc-1}) + abc^2$$

It is well known that:

$$(abc^2)' = \log(abc) \cdot 0 \cdot abc^2 + 2 \cdot 1 \cdot abc^{2-1}$$

Using WolframAlpha we have:

$$(4 \cdot abc^2)' = abc^2 \cdot 0 + 4 \cdot (\log(abc) \cdot 0 \cdot abc^2 + 2 \cdot 1 \cdot abc^{2-1})$$

Every child knows that:

$$(4 \cdot abc^2 \cdot 16)' = 16 \cdot (abc^2 \cdot 0 + 4 \cdot (\log(abc) \cdot 0 \cdot abc^2 + 2 \cdot 1 \cdot abc^{2-1})) + 4 \cdot abc^2 \cdot 0$$

For a detailed explanation you should purchase the paid version:

$$(z^z \cdot 4 + 5 \cdot abc^{abc} + 16 \cdot abc^2 + 4 \cdot abc^2 \cdot 16)' = 4 \cdot (\log(z) \cdot 0 \cdot z^z + z \cdot 0 \cdot z^{z-1}) + z^z \cdot 0 + abc^{abc} \cdot 0 + 5 \cdot (\log(abc) \cdot 1 \cdot abc^{abc} + abc \cdot 1 \cdot abc^{a}$$

The final expression

$$5 \cdot \log(abc) \cdot abc^{abc} + 5 \cdot abc \cdot abc^{abc-1} + 160 \cdot abc$$