

Correct. You applied the rules of exponents correctly to simplify this expression.

$$9^{-3} \cdot 3^4 \cdot (27)^8 = (3^2)^{-3} \cdot 3^4 \cdot (3^3)^8 = 3^{-6} \cdot 3^4 \cdot 3^{24} \text{ which simplifies to } 3^{22}.$$