공업수학 2: Homework #4

Due to: 2021-10-15 (금)

1. Find an equation of the tangent plane to the surface $x^2 - 4y^2 + z^2 = 16$, at $P: (2, 1, 4)$.

2. Suppose $\boldsymbol{F}(x, y, z) = (x, y, z^2 + 1)$ and S is the surface of the region bounded by $x^2 + y^2 = a^2$, $z = 0$, and $z = c > 0$. Evaluate $\iint_S \boldsymbol{F} \cdot \boldsymbol{n} dA$.

3. Find $\sqrt[4]{-1}$.