4주차 Practice Result 3

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**Derive the solution for rotation about a fixed point p\_f (x, y, z)**

**Write down all intermediate steps and all necessary explanations for the solution process.**

**1. Move fixed point to origin (translation)**

p\_f (-x, -y, -z)

**2. Rotate (Rotation (3D) about z-axis)**

x’ = -x cos(θ) + y sin(θ) + (-z) \* 0 + (-w) \* 0

y’ = -x sin(θ) -y cos(θ) + (-z) \* 0 + (-w) \* 0

z’ = (-x) \* 0 + (-y) \* 0 + (-z) \* 1 + (-w) \* 0

**3. Move origin to fixed point (translation)**