2nd mid-term – sample test

1. Decide whether $P = (1,1,1)$ is closer to the l line or to the α plane, where the equation of α is $x - 3y + z = 1$ and l passes through points $A = (2,3,1)$ and $B(-1,-2,3)$.
2. Determine the equation of the plane that contains l_1 and parallel to l_2, where $l_1: \frac{x-3}{2} = y = \frac{z+1}{4}$ and $l_2: x + 3 = \frac{y}{5} = z - 1$
3. Let $A = (2,1,3), B = (-1,2,1), C = (0,3,1)$, and $D = (1,-2,-3)$. Determine…
    a. the equation of AB line
    b. the equation of ACD plane
    c. area of BCD
    d. altitude to B
    e. volume of $ABCD$ tetrahedra
    f. circumscribed center of $ABCD$
4. Determine the missing sides and angle of the spherical triangle if $\alpha = 120°$, $\beta = 60°$and $c = 135°$.