1. In each of the following three subproblems, you are given three points (x_1, y_1), (x_2, y_2), (x_3, y_3). Answer the following questions for each subproblem.
    (i)   Determine whether the three points lie on the same line.
    (ii)   If the answer to part (i) is no then find the area of the triangle whose vertices are (x_1, y_1), (x_2, y_2), (x_3, y_3).

    a) (0, 4), (-1, 2), (3, 1)
    b) (1, 2), (-1, 1), (5, 4)
    c) (2, -1), (-2, 3), (5, 0)

2. Use determinants to find the equation of the line passing through the following points.

    a) (0, 2) and (3, 1)
    b) (1, 2) and (3, 8)