Sketch the following surfaces

1. \(x^2 + y^2 = 4\)
2. \(x^2 + 4z^2 = 16\)
3. \(z = x^2 + 4y^2\)
4. \(x^2 + y^2 = z^2\)

Find the point where the line meets the plane:

1. \(x = 1 - t, y = 3t, z = 1 + t; \ 2x - y + 3z = 6\)
2. \(x = 2, y = 3 + 2t, z = -2 - 2t; \ 6x + 3y - 4z = -12\)

Find the area of the parallelogram given by the points \((1,0), (0,1), (-1,0), (0,-1)\)