



Problem:

Do the points  $A(1; \Gamma; 2)$ ,  $B(-1; H; 3)$ ,  $C(0; \Gamma; 4)$ ,  $D(2; 2; H)$  lie on the same plane?

$$\Gamma = H = 2.$$

Solution:

$$A(1; 2; 2), B(-1; 2; 3), C(0; 2; 4), D(2; 2; 2)$$

In the general case, let's compose the equations of the straight lines  $AB$  and  $CD$ , and check if they intersect, or are parallel, then  $A, B, C, D$  lie on the same plane, otherwise they don't lie. But we notice that for all points  $y = 2$ , i.e. they all lie on the plane  $y = 2$ .

Answer: yes, they lie on the same plane.