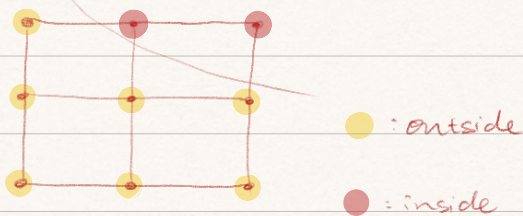


## Marching Cubes

idea: what we need to render are visible parts of the object, thus, just surfaces of objects

$f(x, y) \rightarrow f(z)$  a mapping between 2D space and some value



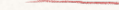
case : 3 outside, 1 inside

possible boundaries: 

since we could not determine the boundaries, we decide to have more detecting points inside the square

Algorithm: when we're having edge cut between points (i.e. one inside point and one outside point) we put one more point at the midpoint of these two points, and detect again.

there are 16 cases: for an object to be inside or outside of the obj  
each corner of a square has a boolean value, indicating it is inside.

of the box or not, i.e.  TL TR BL BR  $\Rightarrow$  4 in total

0	1	0	0
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Since the geometry of the color would be at most connecting 4

