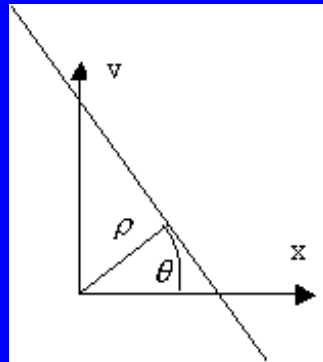# Question

After performing edge detection on a 4x4 image suspected to contain a number of straight edges or lines, 7 pixels were found to lie on sufficiently strong edges, their coordinates are: (2,2),(2,1),(2,-1),(2,-2),(1,-1),(-2,2), and (-2,-2)

where x,y are the coordinates of a point on the line and the parameters $q$ and $r$ are defined as in the figure:

You are required to detect the two strongest lines in the image using the Hough Transform ($[r_1, q_1]$ and $[r_2, q_2]$).

Note: Use the following quantized values for $r$ and $q$, respectively:

[-3 -2 -1 0 1 2 3] and [0 $\pi/4$ $\pi/2$ $3\pi/4$].