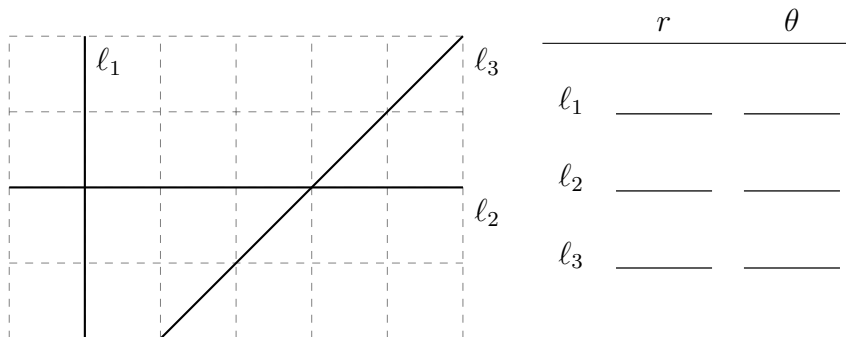


Name: _____ Roll Number: _____

For the **Hough Transform** method for line detection in an image of size $m \times n$,

1. Give the polar representation of a line with perpendicular distance from origin r and angle θ . **(1 mark)**
2. Write down the polar coordinates of the following lines according to image axes. **(6 marks)**



3. Which of the lines in question 2 can not be represented in slope-intercept form (according to image axes)? **(1 mark)**
4. The line with maximum perpendicular distance from origin that can have a visible pixel in an $m \times n$ image will have $r =$ _____. **(1 mark)**
5. Find r for a line passing through the point $(100, 100)$ with $\theta = 45^\circ$. **(1 mark)**