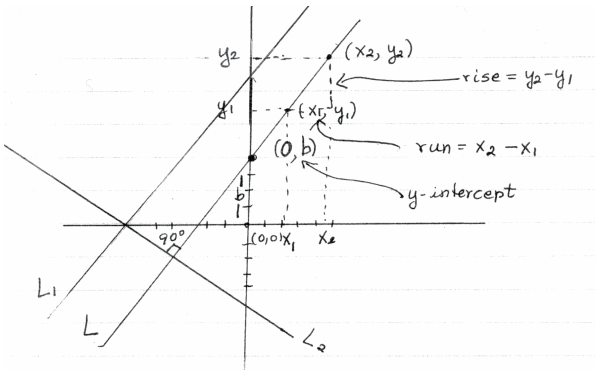
Math 104Q

Lines



☺ **Slope of Line L:** $m = \dfrac{rise}{run} = \dfrac{y_2 - y_1}{x_2 - x_1}$ where (x_1, y_1) and (x_2, y_2) are points on L

- If $m > 0$, the line is increasing
- If $m < 0$, the line is decreasing
- If $m = 0$, the line is horizontal
- If m is undefined, the line is vertical

☺ **Parallel and Perpendicular Lines:**

- Two lines L and L_1 are parallel if their slopes are equal
- Two lines L and L_2 are perpendicular if the multiplication of their slopes is equal to – 1. If L has slope m, and L_2 has slope m_2, then L and L_2 are perpendicular if $m_2 = -1/m$

☺ **Equation of a line L:**

- **The slope-intercept equation:** $y = mx + b$
  where m is the slope, and b is the y-coordinate of the y-intercept of L
- **The point-slope equation:** $y - y_1 = m(x - x_1)$
  where m is the slope, and (x_1, y_1) is a point on L