Notes on Arc Elasticities of Demand and Supply Part 2,

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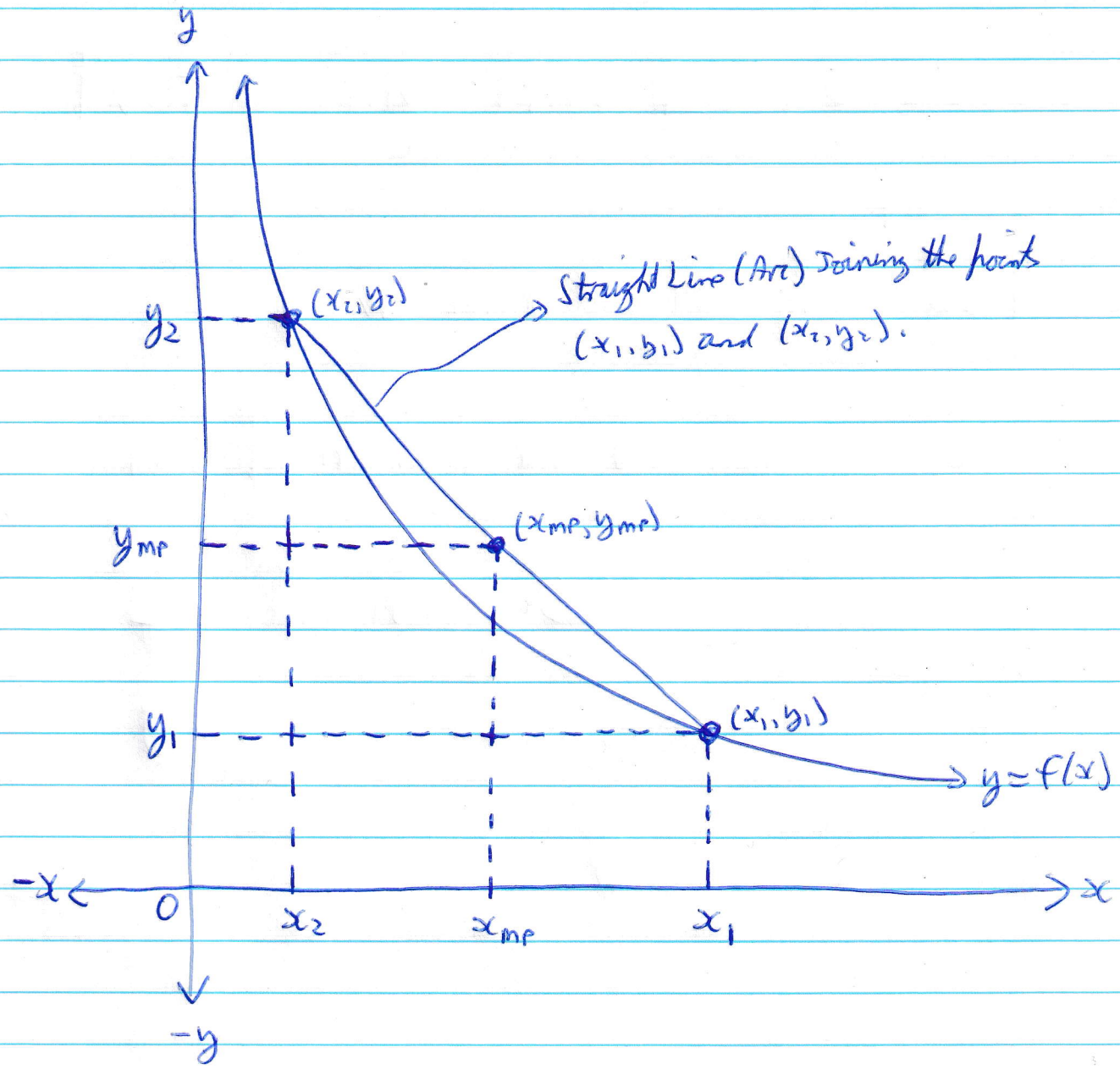
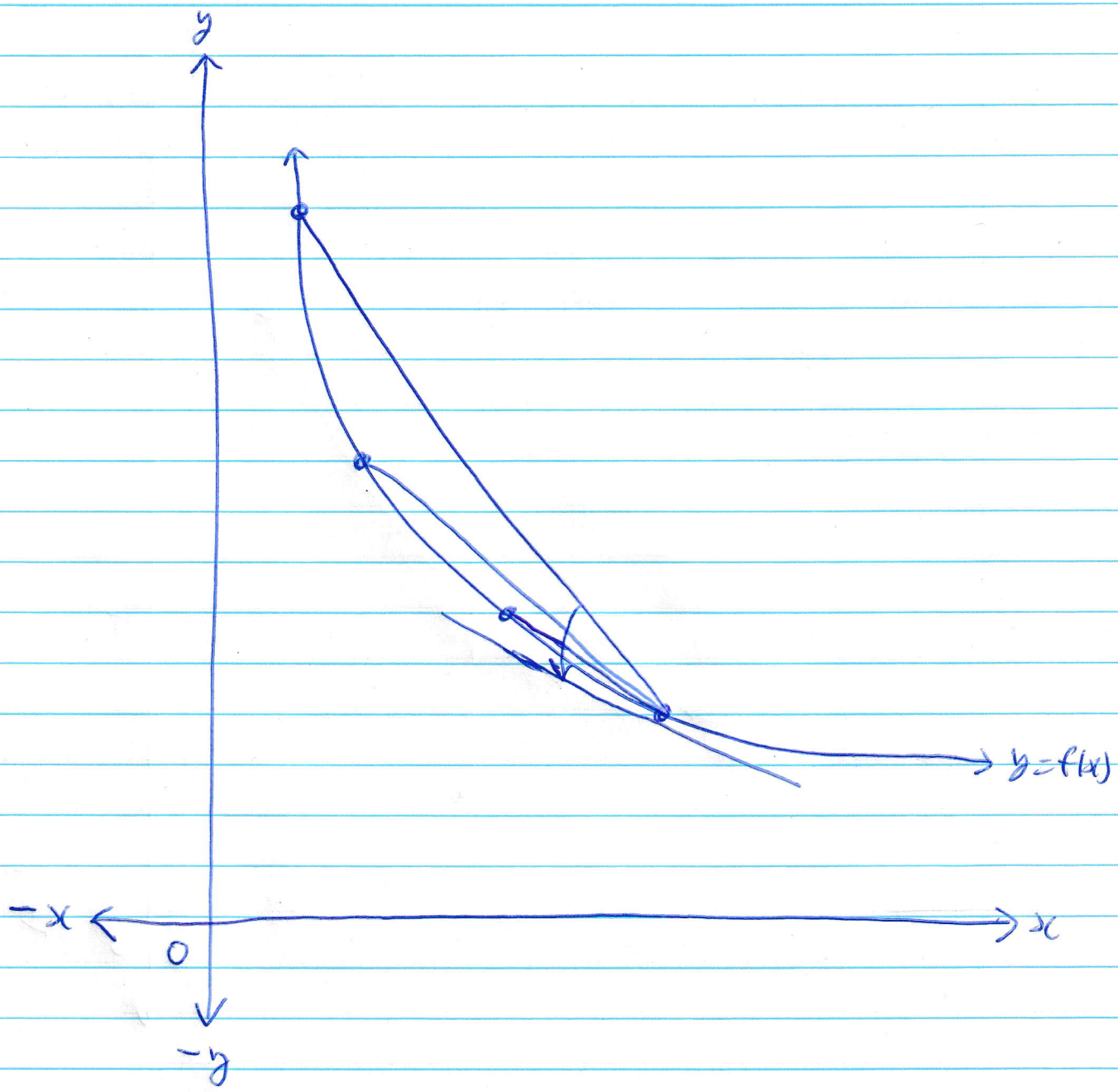


$$x_{mp} = \frac{x_1 + x_2}{2}, \quad y_{mp} = \frac{y_1 + y_2}{2}.$$

(x_1, y_1) = the initial point.

(x_2, y_2) = the final point.

(x_{mp}, y_{mp}) = the mid-point.



As the final point gets closer to the initial point, the difference between all three of the points (that is the mid-point, the final point, and the initial point) gets smaller. In the limit, when the arc becomes the tangent line to the initial point, there is no difference whatsoever between the three points.