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The distance from a point to a line is the perpendicular distance of the point to the line.

Chart, radar chart

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In this image, let’s draw an arbitrary line  and a point . The equation of the line that passes through the point and parallel to the line has the equation . The legs of the right triangle EPF can be obtained by the differences between the interception of x and y-axes of the two lines. In the figure,  and 

Since we are only interested in the magnitude, we have

 and 

The hypothenuse EF is calculated using Pythagorean theorem:



Denote d the distance of P to the line. Due to the area equality of the right triangle, we have:





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The partial derivative of the sum of squared differences with respect to d is:



The minimum of E when the partial derivative is equal to 0:



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Plugging in d from part (2) into the error formula:



Let  => 

*  (proven)

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We can use the Lagrange multiplier technique to find the answer